CITY OF RIVERBANK
Regular Planning Commission Meeting
Tuesday, August 15, 2023 AT 6:00 P.M.
Council Chambers, 6707 Third St., Suite B, Riverbank CA 95367

PLANNING COMMISSION AGENDA

TUESDAY, AUGUST 15, 2023 **– 6:00 P.M.**
(THE AGENDA PACKET IS ONLINE AT T HTTP://WWW.RIVERBANK.ORG/AGENDACENTER)

CALL TO ORDER: Chair: Natasha Basso

ROLL CALL:

Chair:	Natasha Basso
Vice Chair:	Joan Stewart
Commissioner:	John Dinan
Commissioner:	Benjamin Reuben
Commissioner:	Taide Zamora
Commissioner (Alternant):	Steve Link
Commissioner (Alternant):	Michael "Syd" Halterman

CONFLICT OF INTEREST

Any Planning Commission Member or Staff who has a direct Conflict of Interest on any scheduled agenda item to be considered is to declare their conflict at this time.

1. PUBLIC COMMENTS (No Action Can Be Taken)

At this time, members of the public may comment on any item **not appearing on the agenda** and within the subject matter jurisdiction of the Planning Commission. Individual comments will be limited to a **maximum of 3 minutes** per person and each person may speak once during this time; time cannot be yielded to another person. Under State Law, matters presented during the public comment period **cannot be discussed or acted upon**. For record purposes, state your name and City of residence. Please make your comments directly to the Planning Commission Members.
Refer to the last page of this agenda for the Public Comment Procedures via ZOOM.

2. CONSENT CALENDAR

All items listed on the Consent Calendar are to be acted upon by a single action of the Planning Commission unless otherwise requested by an individual Planning Commission Member or member of the public for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by motion of the Planning Commission.

Item 2.1: Posting of the Agenda. The Agenda for the August 15, 2023 Planning Commission meeting was posted on the City Community Center bulletin board, City Hall North & South bulletin boards, Post Office, city website, and emailed to the Library on August 11, 2023.

Item 2.2: Approval of the August 15, 2023 Agenda. This provides an opportunity for the Planning Commission or Staff to recommend that an item be placed on the agenda for discussion or to adjust the proposed agenda to allow an item to be taken out of order.

Recommendation: Approval by roll call vote.

1st_____ 2nd _____

Item 2.3: Approval of the Minutes of the May 16, 2023 Planning Commission Meeting, having been read by the individual Planning Commissioners and stands approved as submitted.

Recommendation: Approval by roll call vote.

1st_____ 2nd _____

3. PLANNING COMMISSION PUBLIC HEARINGS
The public notice for Items 3.1 and 3.2 were published on August 2, 2023 in the Riverbank News. Item 3.3 was published July 5, 2023 in the Riverbank News and was continued to August 15, 2023 from the meeting of July 18, 2023 by a vote of 5:0.

Item 3.1: Architecture and Site Plan Review 05-2023 (Dept. File #23-0009) – Stanislaus Regional Housing Authority, 0 Third and Stanislaus Streets, Riverbank 95367 – (APN 132-012-024). The project, located at the southeast corner of Third and Stanislaus Streets in the City of Riverbank, is the Architecture and Site Plan Review of a new 1,750 sf community center with landscape and parking lot improvements. The proposed project will not have a significant effect on the environment and qualifies for an exemption as in-fill development 15332 Class 32 pursuant to CEQA Guidelines.

Recommendation: Adopt Resolution 2023-007 to approve the architecture and site plan review.

1st_____ 2nd _____

Item 3.2: Tentative Subdivision Map 01-2023 and Development Plan 04-2023 (Dept. File #23-0006) – Pocket Avenue Senior Apartments – 3318 Pocket Avenue (APN 075-090-063). The applicant requests the approval of a tentative subdivision map to divide the property into seven parcels and a Development Plan (review of the site and structures for a planned development zone) for a proposed 28-unit Senior Apartment project on 2.01 acres. The project received approvals in 2022 for a general plan amendment to higher density residential and a rezone to planned development. The subject site is 3318 Pocket Avenue. Pursuant to the California Environmental Quality Act, the proposed Project is exempt pursuant to CEQA Guidelines Section 21159.21 (a-j) Exemption for Qualified Housing Projects.

Recommendation: Take public comment and continue the item to the next public hearing.

1st_____ 2nd _____

Item 3.3: Conditional Use Permit 01-2023 (Dept. File #23-0001) – Aemetis Advanced Products Riverbank, Inc., 5300 Claus Road, Modesto 95357 – (APN 062-031-005 & -011). The project, located at the northeast corner of Claus Road and Claribel Road in the City of Riverbank, is a Conditional Use Permit for a Sustainable Aviation Fuel/Renewable Diesel Production Plant at the Riverbank Industrial Complex. The plant is expected to recycle fats and oils into a low carbon fuel and bring 50 new jobs to the City. The proposed project will not have a significant effect on the environment and an Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR has been prepared.

Recommendation: Approve Resolution 2023-010 to approve the addendum and the use permit.

1st_____ 2nd _____

4.	**PLANNING COMMISSION COMMENTS**

None.

5.	**COUNTY REFERRAL/CORRESPONDENCE/INFORMATION (Information only – No Action)**

None.

6.	**STAFF COMMENTS (Information Only – No Action)**

None.

7.	**ADJOURNMENT**
	Next Regular Planning Commission meeting – October 17, 2023 @ 6:00 pm. The September 19, 2023 meeting has been canceled.

AFFIDAVIT OF POSTING

I hereby certify under penalty of perjury, under the laws of the State of California that the foregoing agenda was posted 72 hours prior to the meeting in accordance to the California Ralph M. Brown Act. Posted this 11th day of August, 2023.

/s/ *Janet Smallen, Sr. CDS, City of Riverbank*

NOTICE REGARDING AMERICANS WITH DISABILITIES ACT: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Dept. at (209) 863-7122 or the City Clerk at cityclerk@riverbank.org at least (48) hours prior to the meeting to enable the City to make reasonable arrangements. A notification of 48 hours before the meeting will enable the City to make reasonable arrangements to ensure any special needs are met. [28 CFR 35.102-35.104 ADA Title II].

NOTICE REGARDING NON-ENGLISH SPEAKERS: Pursuant to California Constitution Article III, Section IV, establishing English as the official language for the State of California, and in accordance with California Code of Civil Procedures Section 185, which requires proceedings before any State Court to be in English, notice is hereby given that all proceedings before the City of Riverbank City Planning Commission shall be in English and anyone wishing to address the Planning Commission is required to have a translator present who will take an oath to make an accurate translation from any language not English into the English language. (Exception: When a State statute requires that at a public hearing that includes a substantial number of the population that are not able to speak or understand English, the City should provide interpreters. This determination is left at the discretion of the City.)

Any documents that are not privileged or part of a Closed Session provided to a majority of the Planning Commission Board after distribution of the agenda packet, regarding any item on this agenda, will be made available for public inspection at the City Clerk's Office, 6707 Third Street, Suite A, Riverbank, CA, during normal business hours.

GENERAL INFORMATION

MEETING SCHEDULE: The Planning Commission meets on the third Tuesday of each month at 6:00 p.m.

COMMISSION AGENDA & REPORTS: The Planning Commission agenda is posted pursuant to the California Brown Act, which only requires agenda title pages to be posted near the entrance of the location where the meeting is to be held and, when technologically able, on the City's website.

Additional documents, that are not privileged, may be provided by the City in its efforts of transparency to keep the public well informed. The agenda packet (agenda plus supporting documents) are posted for public review at the Development Services Department, 6617 Third Street, Riverbank, CA and at www.riverbank.org upon distribution to a majority of the Planning Commission. A subscription to receive the agenda can be purchased for a nominal fee through the City Clerk's Office.

PUBLIC HEARINGS: In general, a public hearing is an open consideration within a meeting of the Planning Commission Board, for which special notice has been given and may be required. During a specified portion of the hearing, any resident or concerned individual is invited to present protests or offer support for the subject under consideration.

City Hall Hours: City Hall is open to the public Monday through Thursday, 7:30 am – 5:30 pm.
QUESTIONS: Contact the Development Services Department at (209) 863-7138.

TELECONFERENCE/VIRUAL PLATFORM PUBLIC PARTICIPATION COMMENT PROCEDURES FOR THE PLANNING COMMISSION MEETING HELD IN CONFORMANCE WITH THE BROWN ACT

PUBLIC "LIVE" VIEWING

- Charter Government Channel – 2 and AT&T U-VERSE – 99
- YouTube Live – City of Riverbank
- Via ZOOM Platform (See instructions below)

SUBMITTING PUBLIC COMMENTS FOR THE RECORD

Written comments must be received before 4:00 p.m. on the day of the meeting in order for them to be distributed to the Planning Commission prior to consideration of the matter. Written comments will not be read aloud at the meeting, but will be reported as received for the record. If you do not receive an acknowledgement of receipt within an hour of submission or by 5:00 p.m., please call the Planning and Building Manager at (209) 863-7124.

ACCEPTABLE METHODS OF SUBMITTING COMMENTS BEFORE THE 4:00 PM DEADLINE

- **Via Mail Service:** Mail comments to City of Riverbank, Attn. Planning and Building Manager, 6707 Third Street, Suite A, Riverbank, CA 95367.
  (Call 209-863-7124 / 209-863-7198 to ensure they were received.)

- **Via Email:** Email to dkenney@riverbank.org (Note: This technology is not a guaranteed method.) Indicate Agenda Item # in the ***subject line.***
  (Call 209-863-7124 / 209-863-7198 to ensure receipt.)

- **Oral Comments In-Person:** The Chair will ask the public if anyone wishes to comment and at that time, you may approach the podium.
- **Oral Comments via Zoom:** The Chair will announce when public comments may be made for a limit of 5 minutes on the agenda item being considered, at which time you will:
  (Please make sure the volume on your video device or any nearby device is turned down.)

- Using a computer – Click on the “raise hand” feature in the webinar controls. This will alert staff that you wish to speak and you will be unmuted.
- Using a Phone – Press *9 to “raise hand”. This will alert staff that you wish to speak and you will be unmuted.

Teleconference Phone Number (This system is a backup for ZOOM technical difficulties only when providing oral comments.) If there are technical difficulties or disconnection with ZOOM while making oral comments, please immediately call the teleconference phone number (209) 863-7151 so that the Commission may receive your comments. The Commission will be waiting for your call. Thank you.

JOIN THE MEETING VIA ZOOM PLATFORM

Join by this link: https://us02web.zoom.us/j/82147035124

- Join by accessing website: https://zoom.us/join, enter Webinar ID: 82147035124
- Join by telephone: 1-669-444-9171 OR 1-669-900-9128, enter Webinar ID: 82147035124

Learn about using ZOOM: - Visit https://zoom.us/j/94943925973?status+success for a free account or to download the application.

City of Riverbank

6707 Third Street ● Riverbank CA 95367
Office: (209) 863-7128 ● FAX: (209) 869-7126

This table is not for publication	
PUBLISH DATE: August 2, 2023	**TO LEGAL: July 26 & 27, 2023**
DEPT.: Planning	**Riverbank News**

NOTICE OF PUBLIC HEARING

CITY OF RIVERBANK PLANNING COMMISSION

NOTICE IS HEREBY GIVEN that the Planning Commission of the City of Riverbank will hold a public hearing on **Tuesday, August 15, 2023, at 6:00 p.m**. or soon thereafter as practical via the Zoom virtual platform and in-person attendance in the City Council Chambers at 6707 Third Street, Suite B, Riverbank, CA. This meeting will be held in accordance with the Brown Act amendment (AB 361). This public hearing is to consider the following matters:

Architecture and Site Plan Review 05-2023 (Dept. File #23-0009) – Stanislaus Regional Housing Authority, 0 Third and Stanislaus Streets, Riverbank 95367 – (APN 132-012-024). The project, located at the southeast corner of Third and Stanislaus Streets in the City of Riverbank, is the Architecture and Site Plan Review of a new 1,750 sf community center with landscape and parking lot improvements. The proposed project will not have a significant effect on the environment and qualifies for an exemption as in-fill development 15332 Class 32 pursuant to CEQA Guidelines.

Tentative Subdivision Map 01-2023 and Development Plan 04-2023 (Dept. File #23-0006) – Pocket Avenue Senior Apartments – 3318 Pocket Avenue (APN 075-090-063). The applicant requests the approval of a tentative subdivision map to divide the property into seven parcels and a Development Plan (review of the site and structures for a planned development zone) for a proposed 28-unit Senior Apartment project on 2.01 acres. The project received approvals in 2022 for a general plan amendment to higher density residential and a rezone to planned development. The subject site is 3318 Pocket Avenue. Pursuant to the California Environmental Quality Act, the proposed Project is exempt pursuant to CEQA Guidelines Section 21159.21 (a-j) Exemption for Qualified Housing Projects.

Planning Commission Meeting
August 15, 2023 at 6:00 pm
City Hall Council Chambers - 6707 Third St., Suite B - Riverbank, California

REPORT AVAILABILITY: Public materials pertaining to the presentation of the subject matter are made available as part of the agenda packet at http://www.riverbank.org/AgendaCenter upon distribution to a majority of the Planning Commission, (72 hours prior to the meeting), and may be viewed at the City Clerk's Office, 6707 Third St., Suite A, Riverbank, during normal business hours.

ALL INTERESTED PERSONS are invited to participate in this public meeting to express views or submit evidence for or against the subject matter being considered. Comments are not accepted via telephone. The following submission of comments are accepted for the record.

Written Comments Prior to the Meeting. Written comments may be delivered in-person to the City of Riverbank, City Clerk's Office, 6707 Third St., Suite A, Riverbank, 95367. Written comments submitted via email to dkenney@riverbank.org or via Mail Delivery Service requires a follow up phone call to (209) 863-7124 for verification of receipt by staff. All written comments must be received by the City Clerk **no later than 4:00 p.m. on the day of the meeting.** Comments received by the deadline will be distributed to the Planning Commission for consideration and will be made part of the official record, but will not be read aloud during the meeting.

Oral Comments Via ZOOM or In-Person During the Meeting. Oral comments may be made at the time the Chair officially opens the hearing for public comment and in the order as called upon by the Chair. *Via In-Person:* Public attendees in the Council Chambers may approach the podium upon the Chair's request to do so. *Via Zoom:* The public participation and comment procedures are provided *on the last page of the agenda* that is posted (72) hours prior to the meeting at http://www.riverbank.org/AgendaCenter.

TECHNICAL DIFFICULTIES: In accordance with the amended Brown Act, if there is a disruption of the meeting broadcast, or in the ability to take call-in or internet based public comment during the conduct of the meeting, the Planning Commission will recess until the issue is resolved, or may adjourn the remainder of the agenda business to a stated time and place, which allows the current meeting to be continued.

ADA COMPLIANCE: In accordance with ADA, every effort will be made to accommodate any person requiring special assistance to participate in the meeting. Contact the City Clerk at (209) 863-7198 or cityclerk@riverbank.org at least (48) hours prior to the meeting.

Questions regarding the proposed subject matter may be made to Planning and Building Manager Donna Kenney at (209) 863-7124 or email dkenney@riverbank.org or email the City Clerk. Questions in regards to meeting procedures contact the City Clerk (209) 863-7198 or call the Administration Dept. at (209) 863-7122 prior to 4:00 p.m. on the day of the meeting.

Published this 2nd day of August 2023.
/s/ Donna M. Kenney, Planning and Building Manager, City of Riverbank

AFFIDAVIT OF POSTING
I, Janet Smallen, hereby certify under penalty of perjury under the laws of the State of California that the foregoing public notice was posted on the exterior bulletin board of North City Hall, South City Hall, and at the Community Center, Riverbank, CA. Dated this 2nd of August 2023. /s/ Janet Smallen, Senior Community Development Specialist, Riverbank, CA

For official use only:

Posted: 8/3/2023	Publish: 8/2/2023	Remove: 8/16/2023

City of Riverbank

6707 Third Street • Riverbank, CA 95367-2396
Phone: (209) 869-7101 • Fax: (209) 869-7100

NOTICE OF CONTINUANCE

AFFIDAVIT OF POSTING NOTICE OF CONTINUANCE:

TUESDAY, JULY 18, 2023
PUBLIC HEARING ITEM 3.1 HAD TECHNICAL ISSUES POSTING TO THE WEBSITE & THEREFORE WE HAD TO CONTINUE ITEM 3.1:

POLICY FOR PUBLIC NOTICE POSTING REQUIREMENTS

I, JANET SMALLEN, SR. COMMUNITY DEVELOPMENT SPECIALIST, declare as follows:

That I am the Sr. Community Development Specialist of the City of Riverbank. That at a regular meeting of the City Planning Commission of the City of Riverbank held July 18, 2023, said Public Hearing Item was continued to the **August 15, 2023,** City Planning Commission meeting at 6:00 p.m. in the Council Chambers, 6707 Third Street, Riverbank, California; and that a copy of said notice was posted at a conspicuous place near the door at which said meeting was held.

I declare under penalty of perjury that the foregoing is true and correct.

Dated this 20th day of July 2023.

/s/ Janet Smallen,
Sr. Community Development Specialist
City of Riverbank

For official use only:

Posted: 07/20/23	Publish: n/a	Remove: 8/15/23

City of Riverbank
Planning Commission Meeting
City Hall North • Council Chambers
6707 Third Street • Suite B • Riverbank • CA 95367

MINUTES

Tuesday, May 16, 2023
(In-Person, and Virtual via ZOOM)

The following minutes reflect action minutes, with added clarification for the record. A copy of the verbatim recording may be obtained, if available, for a fee by contacting the Development Services Department at (209) 863-7128.

CALL TO ORDER/ROLL CALL:

Present: Commissioners: Stewart, Dinan, Reuben, Zamora, Halterman (Alternate), Link (Alternate)

Absent: Chair Basso

CONFLICT OF INTEREST: Any Planning Commissioner and Staff who would have a direct Conflict of Interest on any scheduled agenda item to be considered are to declare their conflict.

No one declared a conflict.

1. PUBLIC COMMENTS (No action to be taken)

At this time, members of the public may comment on any item not appearing on the agenda, and within the subject matter jurisdiction of the Planning Commission. Individual comments will be limited to a **maximum of 5 minutes** per person and each person may speak once during this time; time cannot be yielded to another person. Under State Law, matters presented during the public comment period cannot be discussed or acted upon. For record purposes, state your name and City of residence. Please make your comments directly to the Planning Commission.

1. *Jamie Aggers stated that she is against the proposed River Walk Project.*
2. *Karen Conrotto stated she is against the proposed River Walk Project.*
3. *Dan Whitstone stated he is against the proposed River Walk Project.*
4. *Milt Trewiler stated he is against the proposed River Walk Project.*

2. CONSENT CALENDAR

All items on the Consent Calendar are to be acted upon by a single action of the Planning Commission unless otherwise requested by an individual Planning Commissioner for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by roll call vote.

Item 2.1: Posting of the Agenda. The Agenda for the May 16, 2023, Planning Commission Meeting was posted on the City Community Center bulletin board, City Hall North & South bulletin boards, Post Office, city website and emailed to the Library on May 11, 2023.

Item 2.2: Approval of the May 16, 2023 Agenda. This provides an opportunity for the Planning Commission or Staff to recommend that an item be placed on the agenda

for discussion or to adjust the proposed agenda to allow an item to be taken out of order.

ACTION: *By motion moved/second (Halterman / Reuben / passed 5-0) was approved as submitted; Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Reuben, Zamora, Halterman (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

Item 2.3: Approval of the of the May 16, 2023 Minutes Planning Commission Meeting having been read by the individual Planning Commissioners and stands approved as submitted.

ACTION: *By motion moved/second (Dinan / Zamora / passed 5-0) was approved as submitted; Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Reuben, Zamora, Halterman (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

3. PLANNING COMMISSION PUBL HEARINGS

The public notice for Items 3.1 AND 3.2 was published on May 3, 2023 in the Riverbank News.

Item 3.1: Variance 01-2023 (Dept. File #23-0011) – Crossroads West Unit 1/DMG Development, LP 074-023-050). The project is a proposed variance for an interior side setback for Lot 50, 5510 Treehouse Lane. The lot is not square and narrows at one end. The proposed project will not have a significant effect on the environment and is categorically exempt under Article 19, Section 15305 Minor Alterations in Land Use Limitations, (a) Minor lot line adjustments, side yard and set back variances not resulting in the creation of any new parcel.

- Donna M. Kenney, Building and Planning Manager presented item 3.1 and PowerPoint.
- Commissioner Halterman asked about the Air Conditioner locations.
- Public Hearing was opened up at 6:22 p.m. having no comments the public hearing was closed.

ACTION: *By motion moved/second (Dinan / Halterman / passed 5-0) was approved as submitted; Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Rueben, Zamora, Halterman (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

Item 3.2: Architecture and Site Plan Review 06-2023 (Dept. File #23-0013) – The Heritage/DR Horton – (APN 062-020-001). The project, located at Sierra Street and Central Avenue, is the Architecture and Site Plan Review of the floor plans and elevations for 47 homes in an approved subdivision called The Heritage. The proposed project will not have a significant effect on the environment and is not a Project pursuant to CEQA Guidelines.

- Donna M. Kenney, Building and Planning Manager presented item 3.2 and PowerPoint.
- Staff had some questions Donna responded to them.
- Public Hearing was opened up at 6:29 p.m.
- Applicant Adam Lind spoke on behalf of his project.
- Being no further comments the public hearing was closed at 6:30 p.m.

ACTION: *By motion moved/second (Zamora / Dinan / passed 5-0) was approved as submitted; Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Rueben, Zamora, Halterman (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

4. PLANNING COMMISSION COMMENTS

None

5. COUNTY REFERRAL/CORRESPONDENCE/INFORMATION (Information Only – No Action

None

6. STAFF COMMENTS (Information Only – NO ACTION

None

9. ADJOURNMENT - Regular Planning Commission Meeting – June 20, 2023 @ 6:00 p.m.

ATTEST: APPROVED:

Donna M. Kenney
Planning and Building Manager

Joan Stewart
Chair Planning Commission

City of Riverbank
Planning Commission Meeting
City Hall North • Council Chambers
6707 Third Street • Suite B • Riverbank • CA 95367

MINUTES

Tuesday, July 18, 2023
(In-Person, and Virtual via ZOOM)

The following minutes reflect action minutes, with added clarification for the record. A copy of the verbatim recording may be obtained, if available, for a fee by contacting the Development Services Department at (209) 863-7128.

CALL TO ORDER/ROLL CALL:

Present: Commissioners: Stewart, Dinan, Reuben, Zamora, Halterman (Alternate), Link (Alternate)

Absent: Chair Basso

CONFLICT OF INTEREST: Any Planning Commissioner and Staff who would have a direct Conflict of Interest on any scheduled agenda item to be considered are to declare their conflict.

No one declared a conflict.

1. PUBLIC COMMENTS (No action to be taken)

At this time, members of the public may comment on any item not appearing on the agenda, and within the subject matter jurisdiction of the Planning Commission. Individual comments will be limited to a **maximum of 5 minutes** per person and each person may speak once during this time; time cannot be yielded to another person. Under State Law, matters presented during the public comment period cannot be discussed or acted upon. For record purposes, state your name and City of residence. Please make your comments directly to the Planning Commission.

1. *Jamie Aggers stated that she is against the proposed River Walk Project.*

2. CONSENT CALENDAR

All items on the Consent Calendar are to be acted upon by a single action of the Planning Commission unless otherwise requested by an individual Planning Commissioner for special consideration. Otherwise, the recommendation of staff will be accepted and acted upon by roll call vote.

Item 2.1: Posting of the Agenda. The Agenda for the July 18, 2023, Planning Commission Meeting was posted on the City Community Center bulletin board, City Hall North & South bulletin boards, Post Office, city website and emailed to the Library on July 14, 2023.

Item 2.2: Approval of the July 18, 2023 Agenda. This provides an opportunity for the Planning Commission or Staff to recommend that an item be placed on the agenda for discussion or to adjust the proposed agenda to allow an item to be taken out of order.

ACTION: *By motion moved/second (Dinan / Reuben / passed 5-0) was approved as submitted; Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Reuben, Zamora, Link (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

Item 2.3: Approval of the of the May 16, 2023 Minutes Planning Commission Meeting having been read by the individual Planning Commissioners and stands approved as submitted.

ACTION: *Due to technical issues we were unable to vote on this item.*

3. PLANNING COMMISSION PUBL HEARINGS

The public notice for Items 3.1 was published on July 5, 2023 in the Riverbank News.

Item 3.1: Conditional Use Permit 01-2023 (Dept. File #23-0001) – Aemetis Advanced Products Riverbank, Inc., 5300 Claus Road, Modesto 95357 – (APN 062-031-005 & -011). The project, located at the northeast corner of Claus Road and Claribel Road in the City of Riverbank, is a Conditional Use Permit for a Sustainable Aviation Fuel/Renewable Diesel Production Plant at the Riverbank Industrial Complex. The plant is expected to recycle fats and oils into a low carbon fuel and bring 50 new jobs to the City. The proposed project will not have a significant effect on the environment and an Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR has been prepared.

- Due to technical issues we had to take a motion to continue the item until the next regularly scheduled Planning Commission Meeting to be held on August 15, 2023.
- Donna M. Kenney, Building and Planning Manager did provide the Planning Commission with a public comment we received from “We the People”.
- Public comment was opened up at 6:15 p.m.
- Anne Kurtoni from Oakdale had questions and concerns about the EIR regarding the project.
- Charlotte Eaton from Sonora who has property on Claus Road, had concerns about the project.
- Jorge from Modesto that has property by the project site was wondering what might be happening near his property.
- Being no further comments the public comment was closed at 6:20 p.m.

ACTION: *By motion to continue Item 3.1 to the next scheduled Planning Commission Meeting to be held on August 15, 2023 at 6:00 p.m. due to technical issues. Moved/second (Dinan / Link / passed 5-0) Motion carried by unanimous roll call vote.*

Ayes: Planning Commissioners: Stewart, Dinan, Rueben, Zamora, Link (Alternate) filled in for Basso

Nays: None

Absent: Basso

Abstained: None

4. PLANNING COMMISSION COMMENTS

None

5. COUNTY REFERRAL/CORRESPONDENCE/INFORMATION (Information Only – No Action

None

6. STAFF COMMENTS (Information Only – NO ACTION

None

9. ADJOURNMENT - Regular Planning Commission Meeting – August 15, 2023 @ 6:00 p.m.

ATTEST:

Donna M. Kenney
Planning and Building Manager

APPROVED:

Joan Stewart
Chair Planning Commission

CITY OF RIVERBANK
PLANNING COMMISSION

STAFF REPORT

ITEM NO: 3.1 **August 15, 2023**

Architecture and Site Plan Review 05-2023 (Dept. File #23-0009) – Community Center / Stanislaus Regional Housing Authority – Corner of 3rd and Stanislaus Road (APN 132-012-024). The project, to be located at the northeast corner of Third and Stanislaus Streets in the City of Riverbank, is the Architecture and Site Plan Review of a new 1,750 sf community center with landscape and parking lot improvements. The proposed project will not have a significant effect on the environment and qualifies for an exemption as in-fill development 15332 Class 32 pursuant to CEQA Guidelines.

PROJECT LOCATION:	Northeast corner of 3rd and Stanislaus Streets (APN 132-012-024).
OWNER:	Jim Kruse Stanislaus Regional Housing Authority P.O. Box 581918 Modesto, CA 95358
APPLICANT REPRESENTATIVE:	Jeff Morris TPH Architects 519 McHenry Avenue Modesto, CA 95354
GENERAL PLAN:	Mixed Use (MU)
ZONING:	Downtown Core (DC) Downtown Specific Plan Zoning
ENVIRONMENTAL DETERMINATION:	The proposed project will not have a significant effect on the environment and is categorically exempt under CEQA Article 19 Section 15332 (a-e) Infill Development.
PROJECT PLANNER:	Donna M. Kenney, Planning and Building Manager
RECOMMENDATION:	Approve Architecture and Site Plan Review 05-2023 subject to the conditions in attached Resolution 2023-007.

ACROMYMS: CEQA – California Environmental Quality Act
sf – Square Foot or Feet

I. EXECUTIVE SUMMARY:

The applicant proposes to construct a 1,750 square foot community center for seniors located on a 9,375 square foot parcel on the northeast corner of Third and Stanislaus Streets. The site currently consists of a paved parking lot which was formerly owned by the City and used by downtown visitors. It will require the installation of water and sewer lines to city services, the installation of electrical services, the replacement of the existing parking lot, a trash enclosure, and landscaping, irrigation, and wrought iron fencing.

II. BACKGROUND & PROJECT INFORMATION:

The subject property is located on the northeast corner of Third and Stanislaus Streets. Developed commercial properties are located to the north, west, and south of the proposed project site. Senior housing is located to the east of the property, on both sides of Stanislaus Street. The parcel is 0.2 acres in size and measures approximately 75 feet wide by 125 feet deep. The site's current use is a parking lot used by downtown visitors.

III. ANALYSIS:

A. Site Plan

Conference centers and senior centers are permitted uses in the Downtown Core zoning of the Downtown Specific Plan under the Cultural and Civic Use section. The proposed site plan (Attachment 2) shows a rectangular-shaped lot with landscaping to the north and south, which separates the project site from an existing private parking lot to the north and the Stanislaus Street sidewalk on the south. The site plan shows an alley to be used as a driveway into the property, which will be shared with the adjacent property to the east.

Vehicles will enter into the alley from Stanislaus Street and into the site on the west side of the property, exiting the same way. The perimeter of the parcel is dedicated to landscaping with an outdoor seating area facing Third Street and a bicycle rack adjacent to it. The applicant has worked hard to meet all the City's Downtown Core zoning development standards and Specific Plan design guidelines.

B. Building Design

The proposed senior center is 1,750 square feet in size to be constructed of brick veneer, metal, and cement plaster (stucco). The floor plan features a meeting room, a community room, women's and men's restrooms, and a storage room.

The elevations of the building (Attachment 3) lead one to believe it is a two-story structure but it is in reality a single story. The parapet roof and second row of windows at 15 feet in height give the structure additional height to visually anchor the corner of the intersection. The colors proposed for the exterior of the building are Burnt Rose, Dark Bronze, and a match to Kelly-Moore KM4585 Lover's Hideaway. The roof is a decorative parapet cap in dark bronze. The building will include LED wall pack lights and metal canopies over the two entrances which face Third Street.

A conceptual landscape plan has been provided. A Condition of Approval will require the separate review and approval of the landscaping and irrigation. Construction is estimated to begin in the Fall of 2023 and finish in the Spring of 2024.

C. Parking and Traffic

The hours of the proposed community center will be 9:00am – 6:00pm Monday through Friday, with periodic evening meetings not more than two (2) times a month.

Per the Downtown Specific Plan, the proposed project requires one (1) parking space per every third fixed seat. Non-residential parking may be provided on-site, or off-site within 800 feet of the project site, which is two blocks. There are no fixed seats in this project but staff has determined 45 vehicle spaces are needed based on an estimated occupancy of 96 people in the meeting room and 40 people in the community room (Stanislaus Consolidated Fire will assign occupancy). The applicant has provided 16 spaces on-site including one (1) handicap space and there are a combined 14 street spaces directly in front (Third) and to the side (Stanislaus) of the proposed building. Additional shared street parking exists within 2 blocks of the project to satisfy the remainder of the parking requirement. Many of the seniors using the center may be walking from their housing on Stanislaus Street as well.

D. Signage

There is no signage currently proposed for this project.

IV. REQUIRED FINDINGS:

A. General Plan Consistency Findings

Pursuant to the City of Riverbank General Plan, the Planning Commission must make the following findings relevant to the Architectural and Site Plan Review of the project:

1. Policy Design-8.3: The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic

appeal of new development and rehabilitation. *The proposed structure will replace an older parking lot in need of resurfacing, which will aesthetically improve the view along Third Street and enhance the surrounding commercial properties.*

2. Policy Design-10.1: The City will require site and building access for pedestrians and bicyclists by providing the most direct pedestrian access from sidewalks and parking areas to building entrances while minimizing conflicts with motor vehicle traffic. *The existing sidewalks on Third and Stanislaus Streets will lead citizens directly to the entrances. Bicyclists and pedestrians will have a safe path of travel to access the business.*

V. PUBLIC NOTICE:

The Planning Commission public hearing notice was published in the Riverbank News on August 2, 2023 and posted at City Hall North, South, Post Office and Community Center on August 2nd. It was published on the City website on August 2nd. In addition, the Applicant posted a Notice of Development Permit Application at Third and Stanislaus before August 5, 2023. Also, public notice mailers were distributed to residents and business within 300 feet of the Project site in accordance with City standard practices on Monday, July 31, 2023. At the time of writing this Staff Report (August 10, 2023), City staff has not received any written public comment, but any written comments received subsequent to this date shall be supplied to the Commission on the day of the meeting.

VI. CONCLUSION:

The project will result in construction of a 1,750 square foot community center. The proposed project will replace a parking lot, which will improve the overall aesthetic of the site. The proposed project will also add to the commercial inventory of the City for neighboring residential areas.

VII. ATTACHMENTS:

1. Planning Commission Resolution No. 2023-007 (ASPR)
   Exhibit A - Site Plan
   Exhibit B - Floor Plan
   Exhibit C - Elevations

Respectfully Submitted By:

Donna M. Kenney

_____

Donna M. Kenney
Planning and Building Manager

City of Riverbank
Planning Commission
Resolution No. 2023-007

APPROVAL OF ARCHITECTURE AND SITE PLAN REVIEW 05-2023 FOR THE STANISLAUS REGIONAL HOUSING AUTHORITY COMMUNITY CENTER AT THIRD AND STANISLAUS STREETS (APN 132-012-024)

WHEREAS, an application has been received from Stanislaus Regional Housing Authority for the Architecture and Site Plan Review of a new approximately 1,750 square foot community center at the corner of Third and Stanislaus Streets (APN 132-012-024); and

WHEREAS, the Planning Commission held a public hearing on August 15, 2023 to consider Architecture and Site Plan Review 05-2023 and take public comment; and

WHEREAS, the proposed project is exempt from analysis per the California Environmental Quality Act (CEQA) Section 15332 (a-e), Class 32 In-Fill Development Projects; and

WHEREAS, the Riverbank Planning Commission has made the following required findings:

1. The proposed project, together with the provisions for its design and improvements, is consistent with the goals, policies, program and uses of the General Plan; and

2. The proposed Architecture and Site Plan Review along with the Conditions of Approval is in conformity with both the intent and provisions of the Zoning Ordinance, Title 153, of the City of Riverbank Code of Ordinances and the Downtown Specific Plan; and

WHEREAS, the proposed project is consistent with the following General Plan policies:

1. Policy Design 8.3: The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic appeal of new development and rehabilitation.

2. Policy Design 10.1: The City will require site and building access for pedestrians and bicyclists by providing the most direct pedestrian access from sidewalks and parking areas to building entrances while minimizing conflicts with motor vehicle traffic; and

WHEREAS, the request and plans of SRHA Community Center are hereby granted and approved, subject to the following conditions of approval:

1. Applicant shall comply with the City of Riverbank Standard Conditions as contained in the Planning Commission Resolution 2013-014 and/or receive confirmation from the Community Development Director that a specific condition or conditions does not apply to the project; and

2. The applicant shall build the entire project according to the site plans and elevations date stamped June 15, 2023, and on file with the Community Development Department and presented to the Planning Commission as part of this action; and

3. Complete onsite and offsite Civil Plans for grading, water, sewer, and storm drainage showing elevations are required; and

4. Driveway and sidewalks need to conform to current ADA standards; and

5. Stormwater Plan including geo report, calculations, and hydromodification shall be submitted. A storm filter and drainage maintenance agreement between the project owner and the City is required to be signed; and

6. The water system shall be shown on plans including the backflow device, fire department connection, water meters (1. building service and 2. landscaping), post indicator valve, and water service to the building; and

7. SWWWP for development must be submitted; and

8. ADA signage for entrance to parking lot must be installed (11B-502.8) and utilities shall be undergrounded: electrical, communications, gas, water, fire line, and sewer; and

9. The City's Post Construction Standards Plan needs to be followed including DMA's LID standards, and the required worksheets located in the Appendix of the document. The document is available on the City's website; and

10. Provide City Standard details for water and sewer connections; and

11. When improvements take place, Fire Code permits through Stanislaus Consolidated Fire District shall be obtained as required by Title 24 of the California Fire Code; and

12. The Community Development Director requires and shall approve a bicycle rack design before its installation. Installation shall occur near the new building before Building Final; and

13. An application, landscape and irrigation plans including documentation package, water efficient landscape worksheet, soil management report, slopes, drainage patterns, pad elevations, and finished grade conforming to the state's MWELO requirements, and current fee shall be submitted and approved by the City before the issuance of a Building Permit. Landscaping and irrigation shall be installed and approved before Building Permit Final; and

14. A covered trash enclosure consistent with the City's standards is required near the new building; and

15. New signage shall be reviewed and approved under a separate permit; and

16. All exterior lighting shall be LED and focused downward on the site.

NOW THEREFORE, BE IT RESOLVED by the City of Riverbank Planning Commission that Architecture and Site Plan Review 05-2023 is hereby approved, subject to those conditions established by Resolution No. 2023-007 and as illustrated in **Exhibit A**, Site Plan; **Exhibit B**, Floor Plan; and **Exhibit C**, Elevations.

PASSED AND ADOPTED by the Planning Commission of the City of Riverbank at a meeting held on the 15th of August 2023; motioned by Commissioner _____, seconded by Commissioner _____, and upon roll call was carried by the following vote of __-__:

AYES: Commissioners:

NOES:

ABSENT:

ABSTAIN:

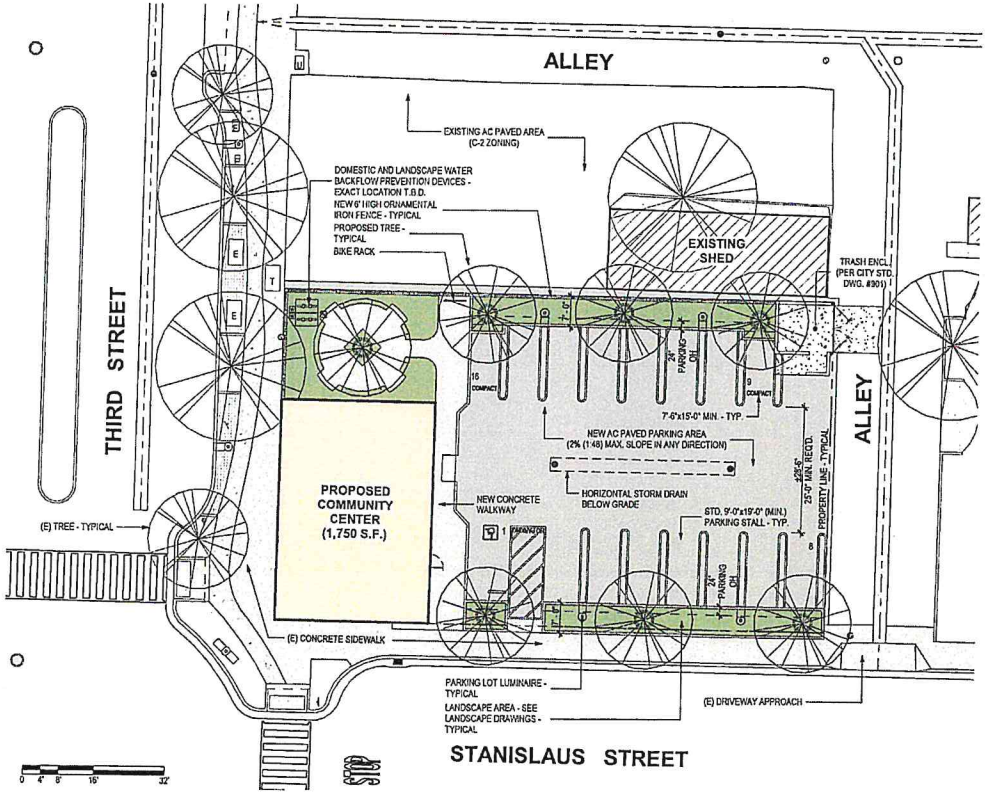
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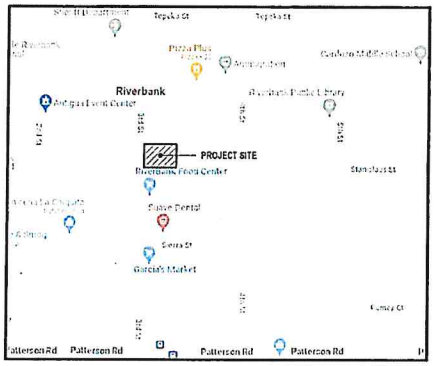
_____
Donna M. Kenney,
Planning and Building Manager

Approved:

_____
Natasha Basso, Chairperson
Planning Commission

Exhibit A – Site Plan
Exhibit B – Floor Plan
Exhibit C - Elevations





VICINITY MAP

SITE INFORMATION:

APN:	132-012-024
CURRENT USE:	OPEN PARKING
CURRENT ZONING:	GENERAL COMMERCIAL (C-2)
PROPOSED ZONING:	GENERAL COMMERCIAL (C-2)
GENERAL PLAN DESIGNATION:	MIXED USE (DOWNTOWN CORE)
PROPERTY SIZE:	9,175 S.F. (0.21 AC)
BUILDING COVERAGE:	19%
ON-SITE PARKING:	16 SPACES
ACCESSIBLE PARKING REQUIRED:	1
ACCESSIBLE PARKING PROVIDED:	1

NORTH

RIVERBANK COMMUNITY CENTER

SCALE: 1/6" = 1'-0"

TPH architects

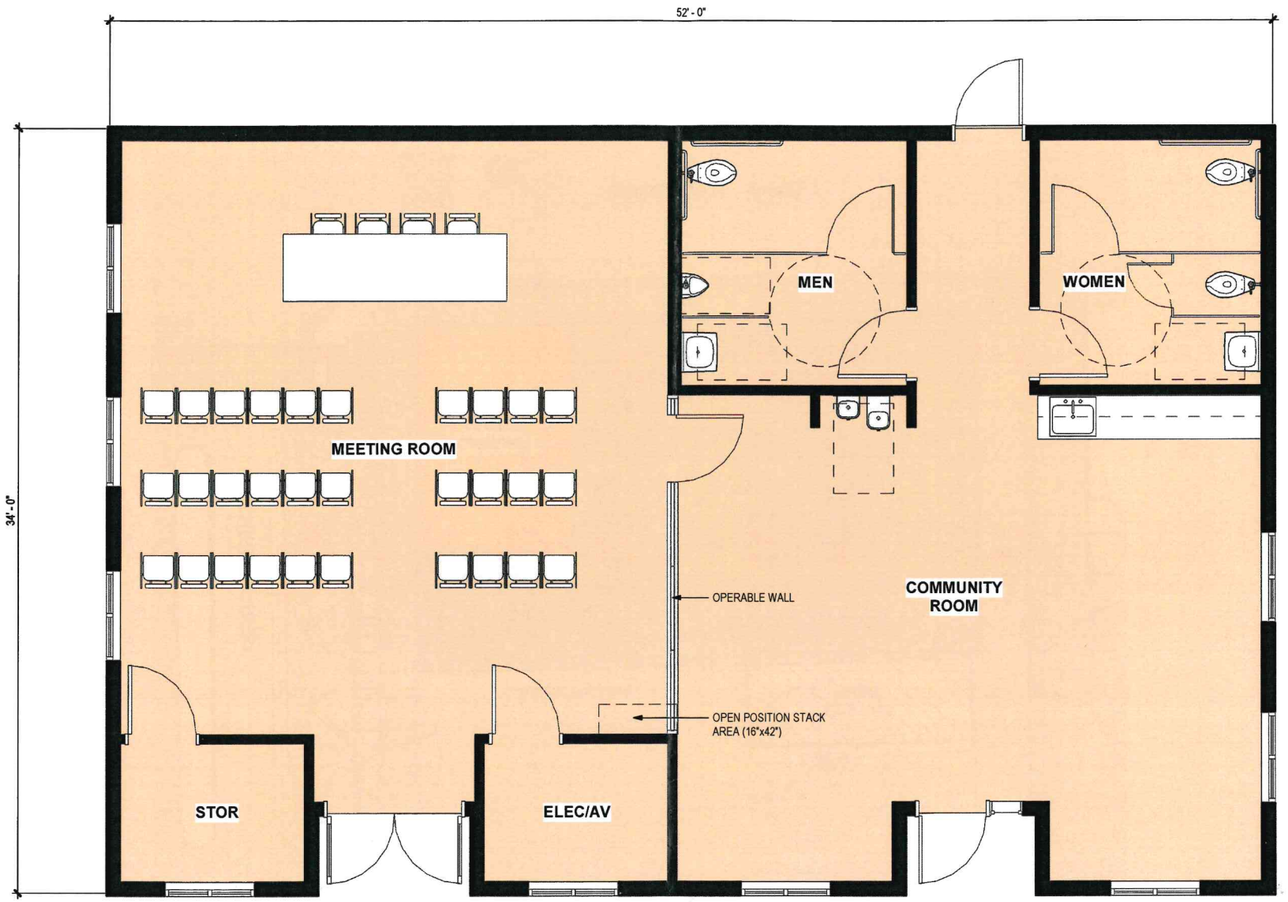
CITY OF RIVERBANK

DATE: 06.14.2023 (REVISED)

CITY OF RIVERBANK

JUN 15 2023

DEVELOPMENT SERVICES



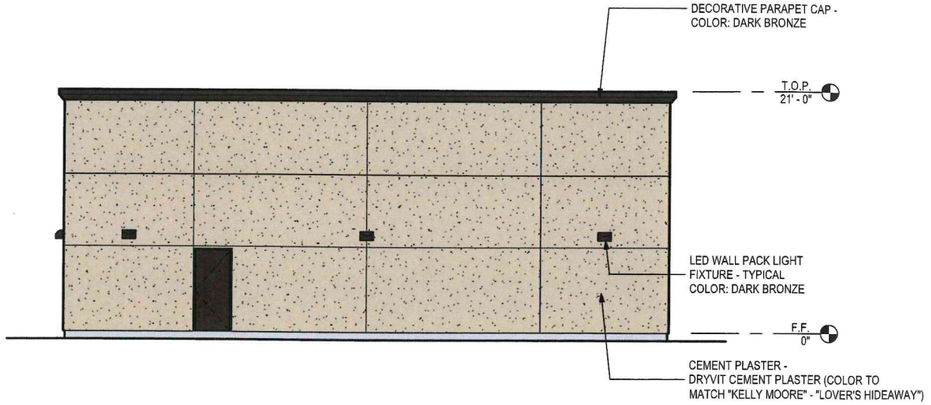
FLOOR PLAN

SCALE: 1/4" = 1'-0"

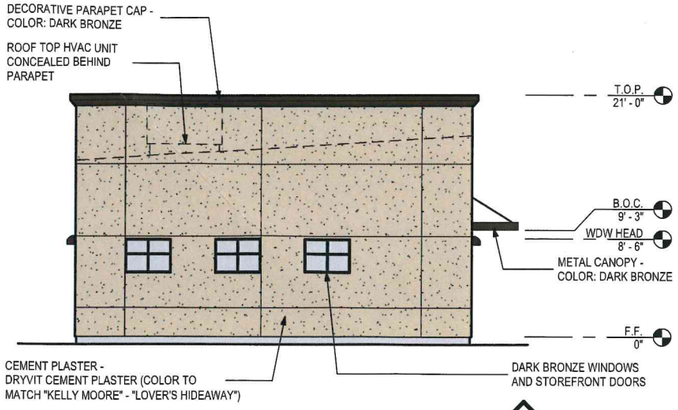
TPH architects

CITY OF RIVERBANK

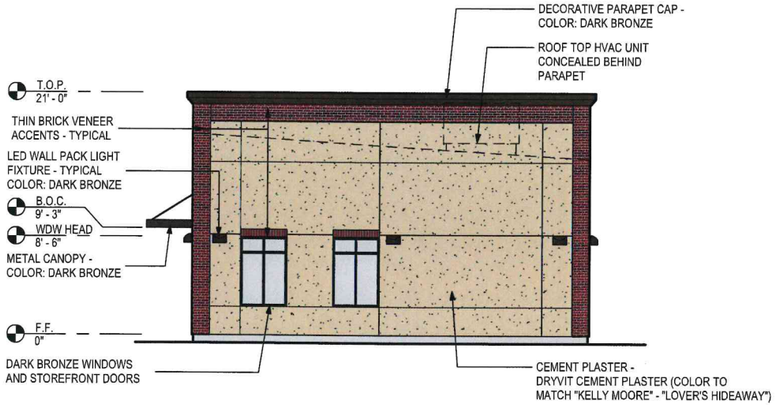
DATE: 01/25/2023



EAST ELEVATION 2



NORTH ELEVATION 1



SOUTH ELEVATION 3



WEST ELEVATION 4

EXTERIOR ELEVATIONS - RIVERBANK COMMUNITY CENTER

SCALE: NTS

TPH architects

CITY OF RIVERBANK

DATE: 03/03/2023

CITY OF RIVERBANK
PLANNING COMMISSION

STAFF REPORT

ITEM NO: **3.2** **August 15, 2023**

APPLICATION: **Tentative Subdivision Map 01-2023 and Development Plan 04-2023 (Dept. File #23-0006) – Pocket Avenue Senior Apartments – 3318 Pocket Avenue (APN 075-090-063)**. The applicant requests the approval of a tentative subdivision map to divide the property into seven parcels and a Development Plan (review of the site and structures for a planned development zone) for a proposed 28-unit Senior Apartment project on 2.01 acres. The project received approvals in 2022 for a general plan amendment to higher density residential and a rezone to planned development.

CEQA: Pursuant to the California Environmental Quality Act, the proposed Project is exempt pursuant to CEQA Guidelines Section 21159.21 (a-j) Exemption for Qualified Housing Projects.

PROJECT PLANNER: Donna M. Kenney, Planning and Building Manager

APPLICANT: Mahesh Khatwani
MK Capital Group
433 Airport Boulevard, Suite 224
Burlingame, CA 94010

Architect: Stacey Wellnitz
CommericalArch
616 14th Street
Modesto, CA 95354

ZONING: Planned Development (PD)

RECOMMENDATION: That the Riverbank Planning Commission approves Tentative Subdivision Map 01-2023 and Development Plan 04-2023.

ACRONYMS: CEQA – California Environmental Quality Act
HDR – Higher Density Residential (16+ units per net acre)
DP – Development Plan
TM – Tentative Map

I. PROJECT DESCRIPTION:

This project is the review and approval of a tentative subdivision map to subdivide the property into seven (7) parcels and a development plan for a proposed twenty-eight (28)-unit senior apartment project on 2.01 acres. Each of the proposed six (6) buildings would be on its own parcel and the seventh (7^{th}) parcel will consist of the parking area, sidewalks, trash enclosures, and other common spaces. The project received approvals from the City Council in 2022 for a general plan amendment to higher density residential and a rezone to planned development. A conceptual site plan was provided at that time for forty (40) units but the new site plan reduces that number to twenty-eight (28) units.

II. BACKGROUND:

The project is located in the south-central portion of Riverbank. The formal address of the project site is 3318 Pocket Avenue. The project site contains an existing single-family residential unit surrounded by agricultural fields, which will be demolished. Existing single-family homes surround the site and a park is down the street to the east.

On April 19, 2021 at the regular Planning Commission meeting, the neighborhood presented a petition to the Commission, citing concerns about traffic and parking from the project. The Planning Commission recommended that the City Council deny General Plan Amendment 01-2021 to modify the existing low density residential (LDR) designation on the property to higher density residential (HDR) and Rezone 02-2021 to rezone the existing single-family (R-1) zoning to Planned Development (PD) for a 40-unit Senior Apartment unit complex on 2.01 acres. Subsequently, the City Council on July 26, 2022 approved the General Plan Amendment and Rezone. The applicant recently submitted an application with fewer units (28) and a tentative map with each of the six (6) buildings on their own parcel. If market conditions change, any of the buildings could be sold.

III. Development Plan 04-2023

A. Site and Building Design

The design of the project as proposed is a senior apartment complex with six (6) buildings on six (6) parcels. The complex is 87,501 square feet in size and to be constructed of cement sliding, veneer stone, and stucco with elastomeric paint finish. The floor plan of each unit features a least one bedroom and bathroom (some have two), closets, a laundry room, kitchen, living room, dining room, and a foyer (Attachment 2 Exhibit A).

Model / Total Square Feet	Bedrooms	Bathrooms	Notes
Building A - 4,587	1 / 2	1 / 1	Buildings 1 and 2
Building B - 5,022	1 / 2	1 / 1	Buildings 3 and 4
Building C - 5,418	2	2	Buildings 5 and 6

The exterior building colors for Model A are proposed as white, grand banks, and peppercorn for Buildings 1 and 2 with Model B having red, grand banks, and peppercorn colors for Buildings

3 and 4. The exterior building colors for Model C are proposed as blue and peppercorn for Buildings 5 and 6. The pairs of buildings will be distinctly colored yet blend cohesively. A Condition of Approval will require the separate review and approval of the landscaping and irrigation.

B. Parking

Per the Riverbank Municipal Code, one-bedroom units require one (1) parking space per unit and two-bedroom units require one and a half (1.5) parking spaces per unit. The proposed project contains twelve (12) one-bedroom units and sixteen (16) two-bedroom units, resulting in the requirement of thirty-eight (38) vehicle spaces. The applicant has provided forty (40) spaces including three (3) van accessible ADA spaces. All of the parking is on a separate parcel which will have a cross access agreement and no reserved spaces. Each building will have an easily accessible bicycle rack.

IV. Tentative Subdivision Map 01-2023

The conceptual site plan reviewed by the Planning Commission in 2021 only had one lot that contained all the structures and parking. The submitted Tentative Map proposes seven (7) separate lots: one (1) lot for each of the six (6) buildings and one (1) lot for parking and common spaces. Each of the buildings could be sold separately.

Tentative Map Findings

A tentative map may be approved or conditionally approved by the Planning Commission if it makes all of the following findings:

1. The proposed map is consistent with applicable general and specific plans. *The proposed map is consistent with the General Plan if the recommended Conditions of Approval are adopted.*

2. The design or improvement of the proposed subdivision is consistent with applicable general and specific plans. *The proposed map is consistent with the General Plan if the recommended Conditions of Approval are adopted as they relate to connectivity, sidewalks, and the provision of amenities.*

3. The site is physically suitable for the type of development. *The site is suitable for a new subdivision of this type.*

4. The site is physically suitable for the proposed density of the development (*18.3 dwelling units per net acre are proposed*). *The subject site is designated as Higher Density Residential per the General Plan. The site is physically suitable for a proposed density at or above sixteen (16) dwelling units per net acre.*

5. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantially and unavoidably injure fish or wildlife or

their habitats. *The design of the subdivision should not injure fish, wildlife, or their habitats, none of which are present on the site.*

6. The design of the subdivision or the type of improvements is not likely to cause serious public health problems. *The design of the subdivision should not cause serious health problems.*

7. The design of the subdivision or the type of improvements will not conflict with easements acquired by the public at large for access through, or use of, property within the proposed subdivision. This division shall only apply to easements of record or to easements established by judgement of a court of competent jurisdiction. *The design of the subdivision should not conflict with any easements of record.*

V. Required Findings

A. General Plan Consistency Findings

The project site's density is 18.3 dwelling units per net acre. At this density, the Project is consistent with a General Plan designation of Higher Density Residential (HDR, net density of 16+ units per acre). Below is a discussion of General Plan Policies with which the proposed project is consistent:

1. Policy Design-3.2: Approved plans, projects, and subdivision requests shall provide residential site and building design that contributes to an attractive, pedestrian-friendly environment along neighborhood streets. Approved plans, projects and subdivision requests will minimize the visual prominence of garages and instead incorporate porches, stoops, active rooms, and functionally opening windows that face the street. *The buildings on site do not contain any garages and the units have enclosed patios.*

2. Policy Design-8.3: The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic appeal of new development and rehabilitation*. The proposed project will be constructed with cement sliding, veneer stone, and stucco with elastomeric paint finish.*

3. Policy Design-10.1: The City will require site and building access for pedestrians and bicyclists by providing the most direct pedestrian access from sidewalks and parking areas to building entrances while minimizing conflicts with motor vehicle traffic. *The proposed project contains pedestrian walkways in between buildings and along the perimeter of the site to allow for direct pedestrian access.*

VI. PUBLIC NOTICE:

The Planning Commission public hearing notice was published in the Riverbank News on August 2, 2023 and posted at City Hall North, South, Post Office and Community Center on August 2nd. It was published on the City website on August 2nd. In addition, the Applicant was to post a Notice of Development Permit Application at 3318 Pocket Avenue before August 5, 2023.

Unfortunately. the notice was not posted in time and this item will need to be continued to the next public hearing, if the Planning Commission so votes.

Also, public notice mailers were distributed to residents and business within 300 feet of the Project site in accordance with City standard practices on Monday, July 31, 2023. At the time of writing this Staff Report (August 11, 2023), City staff has not received any written public comment, but any written comments received subsequent to this date shall be supplied to the Commission on the day of the meeting.

VII. RECOMMENDATION:

Adopt Resolution 2023-008 approving Tentative Map 01-2023 and adopt Resolution 2023-009 approving Development Plan 04-2023.

VIII. ATTACHMENTS:

Attachment 1 - Resolution No. 2023-008
Exhibit A – Tentative Map 01-2023

Attachment 2 - Resolution No. 2023-009
Exhibit A – Development Plan 04-2023

Respectfully Submitted By:

Donna M. Kenney

_____

Donna M. Kenney
Planning and Building Manager

City of Riverbank
Planning Commission
Resolution No. 2023-008

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF RIVERBANK APPROVING TENTATIVE MAP 01-2023 FOR POCKET AVENUE SENIOR APARTMENTS AT 3318 POCKET AVENUE (APN 075-090-063)

WHEREAS, the MK Capital Group has filed an application with the City for a Tentative Map (TM 01-2023) to subdivide a 2.01-acre lot property into seven (7) parcels with twenty-eight (28) residential apartment units; and

WHEREAS, the City has reviewed and has determined that the Tentative Map is consistent with the Subdivision Map Act and applicable City policies and ordinances; and

WHEREAS, the Planning Commission held a public hearing on August 15, 2023 to consider Tentative Map 01-2023 and take public comment; and

WHEREAS, the proposed project is exempt from analysis per the California Environmental Quality Act (CEQA) Section 21159.21 (a-j) Exemption for Qualified Housing Projects; and

WHEREAS, the Planning Commission of the City of Riverbank hereby finds and adopts the following findings:

1. The proposed map is consistent with applicable general and specific plans:

   Policy Design 3.2: Approved plans, projects, and subdivision requests shall provide residential site and building design that contributes to an attractive, pedestrian-friendly environment along neighborhood streets. Approved plans, projects and subdivision requests will minimize the visual prominence of garages and instead incorporate porches, stoops, active rooms, and functionally opening windows that face the street.

   Policy Design 8.3: The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic appeal of new development and rehabilitation.

   Policy Design 10.1: The City will require site and building access for pedestrians and bicyclists by providing the most direct pedestrian access from sidewalks and parking areas to building entrances while minimizing conflicts with motor vehicle traffic.

2. The design or improvement of the proposed subdivision is consistent with applicable general and specific plans.

3. The site is physically suitable for the type of development.

4. The site is physically suitable for the proposed density of the development.

5. The design of the subdivision or the proposed improvements is not likely to cause substantial environmental damage or substantially and unavoidably injure fish or wildlife or their habitats.

6. The design of the subdivision or the type of improvements is not likely to cause serious public health problems.

7. The design of the subdivision or the type of improvements will not conflict with easements acquired by the public at large for access through, or use of, property within the proposed subdivision. In this connection, the City Council may approve a map if it finds that alternate easements for access or for use will be provided, and that these will be substantially equivalent to ones previously acquired by the public. This division shall only apply to easements of record or to easements established by judgement of a court of competent jurisdiction.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF RIVERBANK HEREBY RESOLVES that it approves Tentative Map 01-2023 for the Pocket Avenue Senior project, attached hereto as "**Exhibit A"** and incorporated herein by this reference.

PASSED AND ADOPTED by the Planning Commission of the City of Riverbank at a meeting held on the 15th of August 2023; motioned by Commissioner _____, seconded by Commissioner _____, and upon roll call was carried by the following vote of __-__:

AYES: Commissioners:

NAYS:

ABSENT:

ABSTAIN:

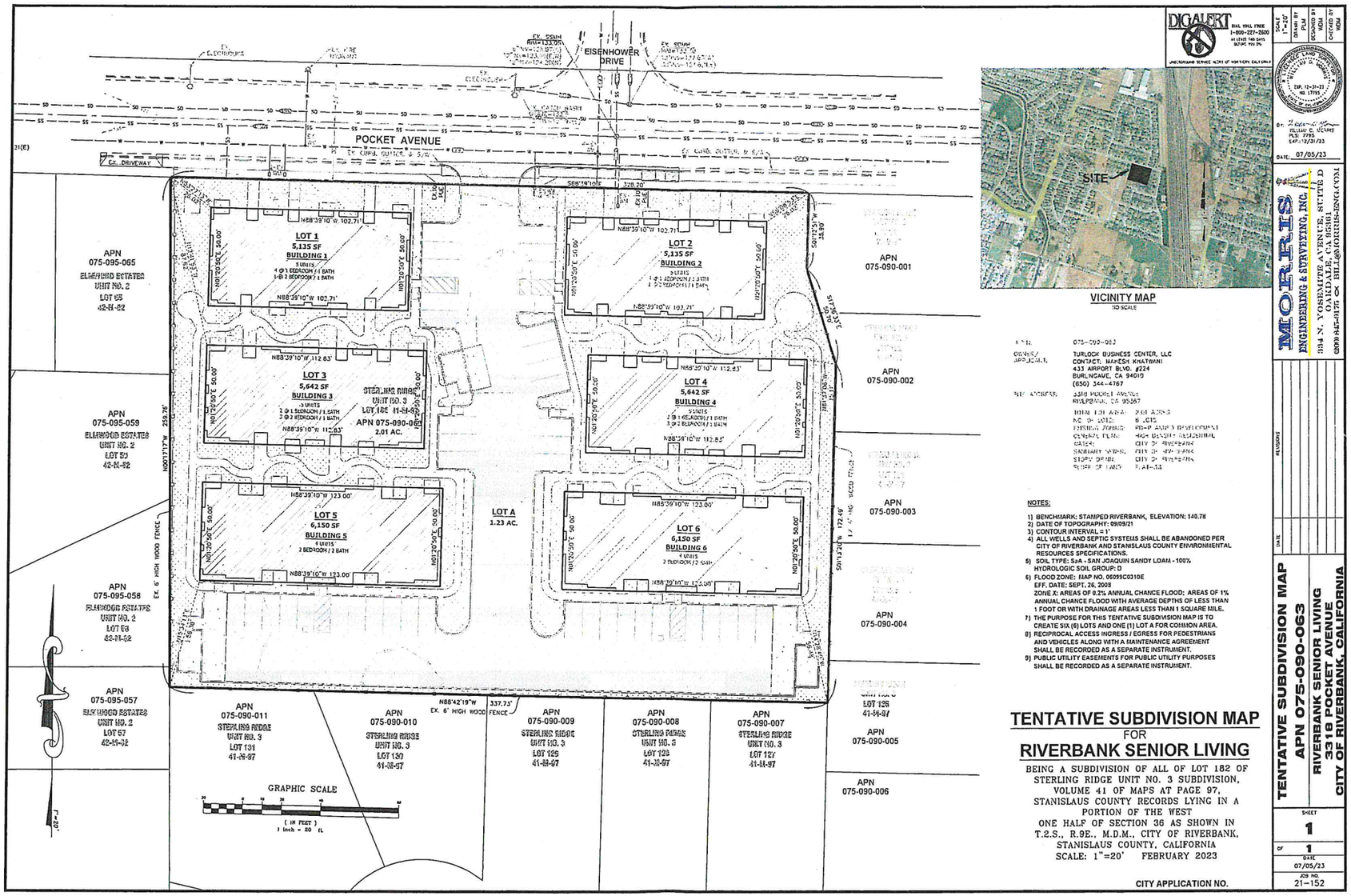
Attest:

_____
Donna M. Kenney,
Planning and Building Manager

Approved:

_____
Natasha Basso, Chairperson
Planning Commission

Exhibit A – Tentative Map 01-2023


EISENHOWER DRIVE
POCKET AVENUE
EX. DRIVEWAY
EX. ELECTRIC BOX
EX. FIRE HYDRANT
EX. SDMH RIM=133.05
EX. SDMH RIM=132.70
EX. CURB, GUTTER & S/W
EX. 6" HIGH WOOD FENCE
EX. 8" SS
EX. 10" SS
EX. 12" SS
EX. 15" SS
EX. 18" SS
EX. 24" SS
EX. 30" SS
EX. 36" SS
EX. 42" SS
EX. 48" SS
EX. 54" SS
EX. 60" SS
EX. 66" SS
EX. 72" SS
EX. 78" SS
EX. 84" SS
EX. 90" SS
EX. 96" SS
EX. 102" SS
EX. 108" SS
EX. 114" SS
EX. 120" SS
EX. 126" SS
EX. 132" SS
EX. 138" SS
EX. 144" SS
EX. 150" SS
EX. 156" SS
EX. 162" SS
EX. 168" SS
EX. 174" SS
EX. 180" SS
EX. 186" SS
EX. 192" SS
EX. 198" SS
EX. 204" SS
EX. 210" SS
EX. 216" SS
EX. 222" SS
EX. 228" SS
EX. 234" SS
EX. 240" SS
EX. 246" SS
EX. 252" SS
EX. 258" SS
EX. 264" SS
EX. 270" SS
EX. 276" SS
EX. 282" SS
EX. 288" SS
EX. 294" SS
EX. 300" SS
EX. 306" SS
EX. 312" SS
EX. 318" SS
EX. 324" SS
EX. 330" SS
EX. 336" SS
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EX. 348" SS
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EX. 366" SS
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EX. 396" SS
EX. 402" SS
EX. 408" SS
EX. 414" SS
EX. 420" SS
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EX. 714" SS
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EX. 738" SS
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EX. 750" SS
EX. 756" SS
EX. 762" SS
EX. 768" SS
EX. 774" SS
EX. 780" SS
EX. 786" SS
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EX. 9576

City of Riverbank
Planning Commission
Resolution No. 2023-009

APPROVAL OF DEVELOPMENT PLAN 04-2023
FOR POCKET AVENUE SENIOR APARTMENTS AT
3318 POCKET AVENUE (APN 075-090-063)

WHEREAS, an application has been received from MK Capital Group for a Development Plan (Planned Development Architecture and Site Plan Review) of an approximately 87,501 square foot senior apartment complex at 3318 Pocket Avenue (APN 075-090-063); and

WHEREAS, the Planning Commission held a public hearing on August 15, 2023 to consider Architecture and Site Plan Review 04-2023 and take public comment; and

WHEREAS, the proposed project is exempt from analysis per the California Environmental Quality Act (CEQA) Section 21159.21 (a-j) Exemption for Qualified Housing Projects; and

WHEREAS, the Riverbank Planning Commission has made the following required findings:

1. The proposed project, together with the provisions for its design and improvements, is consistent with the goals, policies, program and uses of the General Plan; and

2. The proposed Development Plan (Architecture and Site Plan Review) is in conformity with both the intent and provisions of the Zoning Ordinance, Title 153, of the City of Riverbank Code of Ordinances; and

WHEREAS, the proposed project is consistent with the following General Plan policies:

1. Policy Design 3.2: Approved plans, projects, and subdivision requests shall provide residential site and building design that contributes to an attractive, pedestrian-friendly environment along neighborhood streets. Approved plans, projects and subdivision requests will minimize the visual prominence of garages and instead incorporate porches, stoops, active rooms, and functionally opening windows that face the street.

2. Policy Design 8.3: The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic appeal of new development and rehabilitation.

3. Policy Design 10.1: The City will require site and building access for pedestrians and bicyclists by providing the most direct pedestrian access from sidewalks and parking areas to building entrances while minimizing conflicts with motor vehicle traffic; and

WHEREAS, the request and plans of MK Capital Group are hereby granted and approved, subject to the following conditions of approval:

1. Applicant shall comply with the City of Riverbank Standard Conditions as contained in the Planning Commission Resolution 2013-014 and/or receive confirmation from the Community Development Director that a specific condition or conditions does not apply to the project; and
2. The applicant shall build the entire project according to the site plans and elevations date stamped July 11, 2023, and on file with the Community Development Department and presented to the Planning Commission as part of this action; and
3. Complete onsite and offsite Civil Plans for grading, water, sewer, and storm drainage showing elevations are required; and
4. Driveway and sidewalks need to conform to current ADA standards; and
5. Stormwater Plan including geo report, calculations, and hydromodification shall be submitted. A storm filter and drainage maintenance agreement between the project owner and the City is required to be signed; and
6. The water system shall be shown on plans including the backflow device, fire department connection, water meters (1. building service and 2. landscaping), post indicator valve, and water service to the building; and
7. SWWWP for development must be submitted; and
8. ADA signage for entrance to parking lot must be installed (11B-502.8) and utilities shall be undergrounded: electrical, communications, gas, water, fire line, and sewer; and
9. The City's Post Construction Standards Plan needs to be followed including DMA's LID standards, and the required worksheets located in the Appendix of the document. The document is available on the City's website; and
10. Provide City Standard details for water and sewer connections; and
11. When improvements take place, Fire Code permits through Stanislaus Consolidated Fire District shall be obtained as required by Title 24 of the California Fire Code; and
12. The Community Development Director requires and shall approve a bicycle rack design before their installation. Installation shall occur near each of the six (6) new buildings before Building Final; and

13. An application, landscape and irrigation plans including documentation package, water efficient landscape worksheet, soil management report, slopes, drainage patterns, pad elevations, and finished grade conforming to the state's MWELO requirements, and current fee shall be submitted and approved by the City before the issuance of a Building Permit. Landscaping and irrigation shall be installed and approved before Building Permit Final; and
14. Covered trash enclosures shall be consistent with the City's standards; and
15. Any signage shall be reviewed and approved under a separate permit; and
16. Any block walls shall be reviewed and approved under a separate permit; and
17. All exterior lighting shall be LED and focused downward on the site.

NOW THEREFORE, BE IT RESOLVED by the City of Riverbank Planning Commission that Architecture and Site Plan Review 04-2023 is hereby approved, subject to those conditions established by Resolution No. 2023-009 and as illustrated in **Exhibit A**, DP 04-2023.

PASSED AND ADOPTED by the Planning Commission of the City of Riverbank at a meeting held on the 15th of August 2023; motioned by Commissioner _____, seconded by Commissioner _____, and upon roll call was carried by the following vote of __-__:

AYES: Commissioners:

NAYS:

ABSENT:

ABSTAIN:

Attest:

_____
Donna M. Kenney,
Planning and Building Manager

Approved:

_____
Natasha Basso, Chairperson
Planning Commission

Exhibit A – Development Plan 04-2023

RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

3318 POCKET AVENUE

--

RIVERBANK, CA

95367

075-090-063

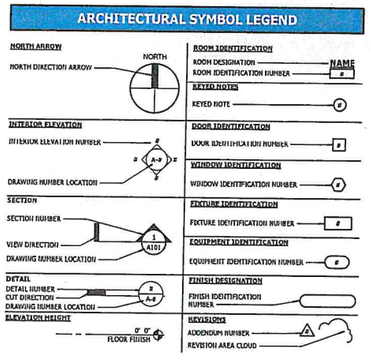
DRAWING INDEX

GENERAL
G-1.0 COVER SHEET

ARCHITECTURAL
A-1.0 SITE PLAN
A-2.0 OVERALL FLOOR PLAN - BUILDING A
A-2.1 OVERALL FLOOR PLAN - BUILDING B
A-2.2 OVERALL FLOOR PLAN - BUILDING C
A-3.0 UNIT TYPE 1 - FLOOR PLAN
A-3.1 UNIT TYPE 2 - FLOOR PLAN
A-3.2 UNIT TYPE 3 - FLOOR PLAN
A-4.0 EXTERIOR ELEVATIONS - BUILDING A
A-4.1 EXTERIOR ELEVATIONS - BUILDING B
A-4.2 EXTERIOR ELEVATIONS - BUILDING C

CIVIL
1 TENATIVE SUBDIVISION MAP

ARCHITECTURAL SYMBOL LEGEND



DEVELOPMENT DATA

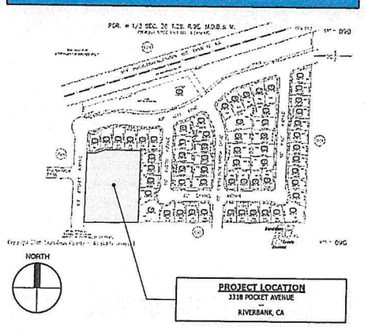
ASSESSOR'S PARCEL NUMBER:	075-090-063
PROJECT ADDRESS:	3318 POCKET AVENUE -- RIVERBANK, CA
PROJECT JURISDICTION:	BUILDING: CITY OF RIVERBANK FIRE: CITY OF RIVERBANK SEWER DISTRICT: CITY OF RIVERBANK WATER DISTRICT: CITY OF RIVERBANK
SITE AREA:	87,501 SF
SITE AREA TABULATIONS:	SEE DRAWING A-1.0 FOR SITE AREA BREAKDOWN
OCCUPANCY: CBC SECTION 304	R-2 MULTI-FAMILY RESIDENTIAL
STORIES:	1
FIRE SPRINKLERS:	YES
ALLOWABLE BUILDING HEIGHT: CBC SECTION 504.3	60'-0" ABOVE GRADE PLANE
ALLOWABLE BUILDING AREA: CBC SECTION 506.2	28,000 SF W/O AREA INCREASES
TYPE OF CONSTRUCTION: CBC SECTION 602.1	VB
PROPOSED BUILDING AREA:	SEE DRAWING A-1.0 FOR BUILDING AREA BREAKDOWN
UNIT QUANTITY:	ONE-BEDROOM/ONE-BATHROOM ONE-BEDROOM/TWO-BATHROOM TWO-BEDROOM/TWO-BATHROOM
PARKING:	SEE PARKING CALCULATION ON DRAWING A-2.0

PROJECT TEAM

PROPERTY OWNER
PK CAPITAL GROUP
MAHESH KHATWANI
433 AIRPORT BOULVARD, SUITE 440
BURLINGAME, CA 94010
PH. (209) 481-2334
EMAIL MAHESH@PKCAPITALGROUPS.COM

ARCHITECT
COMMERCIALARCH
STACEY WELLNITZ
816 14TH STREET
MODESTO, CA 95354
PH. (209) 571-8158
EMAIL SWELLNITZ@COMMERCIALARCH.COM

VICINITY MAP



CITY OF RIVERBANK
JUL 11 2023
DEVELOPMENT SERVICES

#	REVISION	BY

commercialarch

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modesto california 95354
www.commercialarch.com
ph 209.571.8158

RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

LOCATION
3318 POCKET AVENUE
--
RIVERBANK, CA
95367

PARCEL
075-090-063

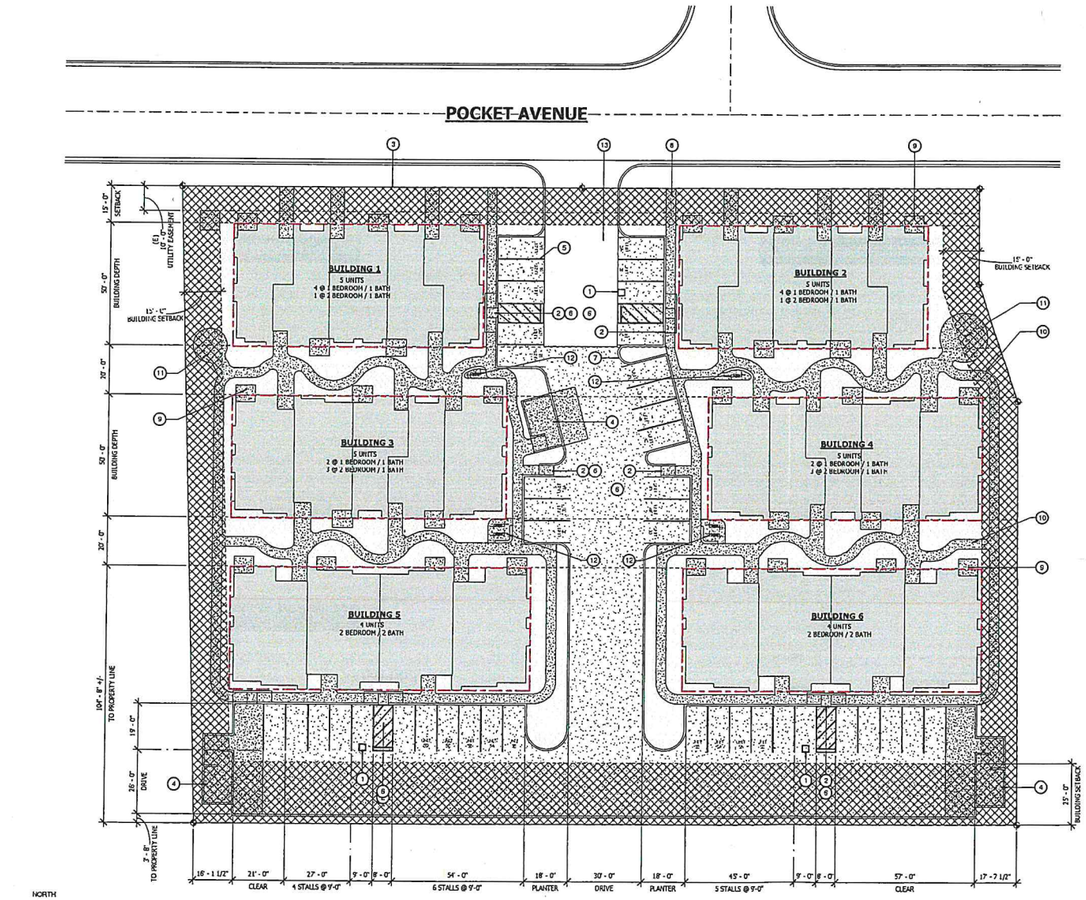
OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBER

DATE
7/10/2023 11:42:00 AM
COMMARCH #
21-222

G-1.0

COVER SHEET



1 SITE PLAN — SCALE: 1" = 20'-0"

KEYNOTES

#	NOTE
1	VAN ACCESSIBLE PARKING STALL AND SIGNING
2	ACCESSIBLE CURB RAMP - SEE DETAIL
3	PROPERTY LINE, TYPICAL
4	TRASH ENCLOSURE, TYPICAL - SEE DETAIL
5	PARKING STRIPING, TYPICAL
6	TRUNCATED DOME MAT WHERE PATH OF TRAVEL CROSSES TRAFFIC - SEE DETAIL
7	CONCRETE CURB, TYPICAL - SEE DETAIL
8	4" CONCRETE WALK WITH MEDIUM BROOM FINISH, TYPICAL - SEE DETAIL
9	AREA INDICATES 50 sf MIN OF PERSONAL OUTDOOR AREA FOR EACH TENANT, SEE SITE AREA TABULATIONS BELOW FOR CUMULATIVE VALUE
10	RED LINE INDICATES PROPOSED PROPERTY LINE, TYPICAL
11	COMMON AREA SEATING, TYPICAL
12	DECORATIVE BICYCLE RACK -- 36" HIGH, PAINTED TUBULAR STEEL, 2-BICYCLE CAPACITY
13	STAMPED AND STAINED CONCRETE AT FRONT ENTRY, TYPICAL AS INDICATED

PROJECT AMENITIES

PROJECT WILL PROVIDE THE FOLLOWING UPGRADED AMENITIES:

1. ENHANCED LANDSCAPING
   LANDSCAPING WILL BE PROVIDED WITH 24" BOX TREES
2. COLORED CONCRETE AT ENTRY
   SEE KEYNOTE 13
3. UPGRADED LIGHTING
   SITE LIGHTING POLES WILL BE DECORATIVE
4. COMMON OUTDOOR SEATING AREA
   SEE KEYNOTE 11
5. WINDOW BLINDS
   EACH UNIT WILL BE PROVIDED WITH WINDOW BLINDS

PARKING REQUIRED

REQUIRED PARKING PER CITY OF RIVERBANK MUNICIPAL CODE

ONE-BEDROOM UNIT	(1) ON-SITE PARKING STALL / UNIT
TWO-BEDROOM UNIT	(1.5) ON-SITE PARKING STALLS / UNIT

BUILDING 1 BUILDING A	4 UNITS @ 1-BEDROOM 1 UNITS @ 2-BEDROOM	4 SPACES REQUIRED 2 SPACES REQUIRED
BUILDING 2 BUILDING A	4 UNITS @ 1-BEDROOM 1 UNITS @ 2-BEDROOM	4 SPACES REQUIRED 2 SPACES REQUIRED
BUILDING 3 BUILDING B	2 UNITS @ 1-BEDROOM 3 UNITS @ 2-BEDROOM	2 SPACES REQUIRED 5 SPACES REQUIRED
BUILDING 4 BUILDING B	2 UNITS @ 1-BEDROOM 3 UNITS @ 2-BEDROOM	2 SPACES REQUIRED 5 SPACES REQUIRED
BUILDING 5 BUILDING C	4 UNITS @ 2-BEDROOM	6 SPACES REQUIRED
BUILDING 6 BUILDING C	4 UNITS @ 2-BEDROOM	6 SPACES REQUIRED
PARKING REQUIRED	28 UNITS	38 SPACES

PARKING PROVIDED

MARK	DESCRIPTION	COUNT
ADA-1	VAN ACCESSIBLE STALL -- 9'-0" W x 19'-0" D	1
STD-1	STANDARD STALL -- 9'-0" W x 19'-0" D	37
TOTAL:		40

SITE AREA TABULATIONS

DESCRIPTION	AREA	% OF TOTAL
ASPHALT PAVING	20636 SF	24%
BUILDING 1	4587 SF	5%
BUILDING 2	4587 SF	5%
BUILDING 3	5022 SF	6%
BUILDING 4	5022 SF	6%
BUILDING 5	5418 SF	6%
BUILDING 6	5418 SF	6%
CONCRETE WALK	11992 SF	14%
DECORATIVE CONCRETE	1998 SF	2%
LANDSCAPE PLANTER	21331 SF	24%
PRIVATE PATIO	1531 SF	2%
	87501 SF	100%

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RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

LOCATION
3318 POCKET AVENUE
RIVERBANK, CA
95367

PARCEL
075-090-063

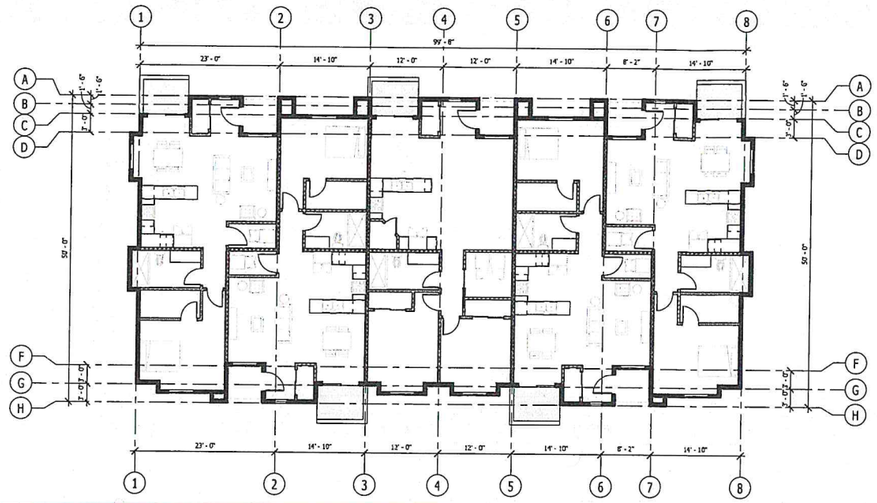
OWNER
MAHESH KHATWANI

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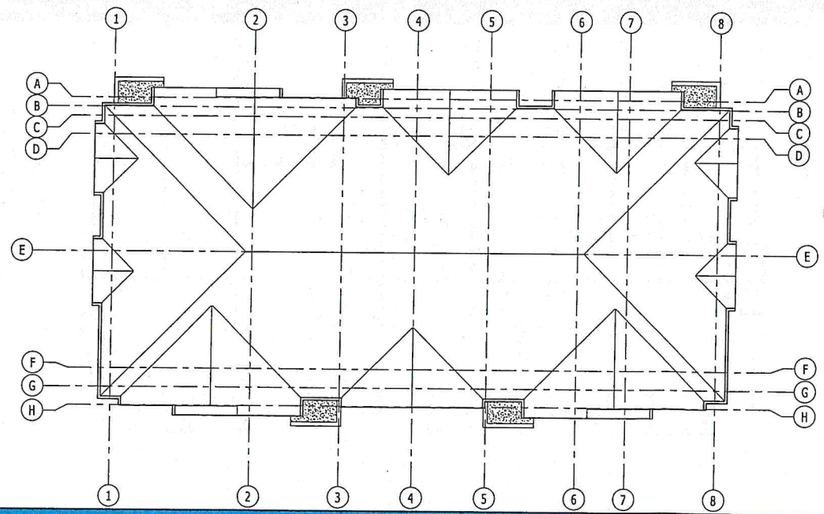
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SITE PLAN



1 FLOOR PLAN - BUILDING A

SCALE: 1/8" = 1'-0"



2 ROOF PLAN - BUILDING A

SCALE: 1/8" = 1'-0"

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RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

LOCATION
3318 POCKET AVENUE
RIVERBANK, CA 95367

PARCEL
075-090-063

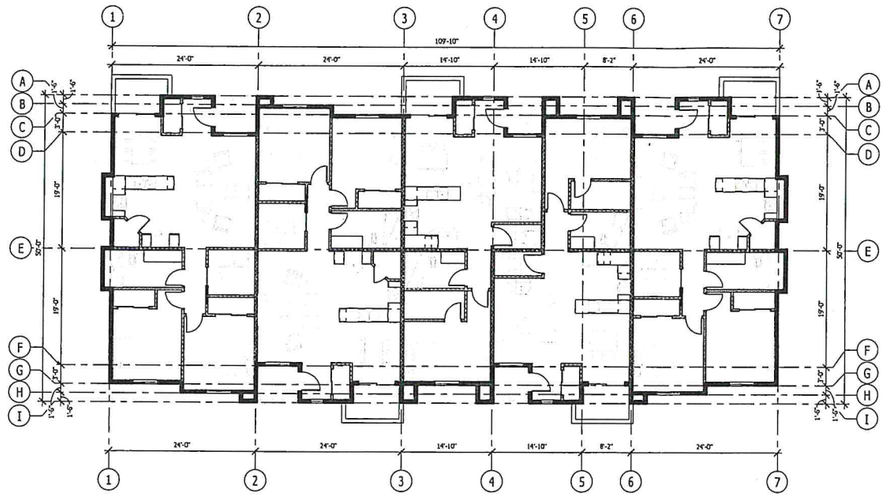
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BUILDING PERMIT NUMBER

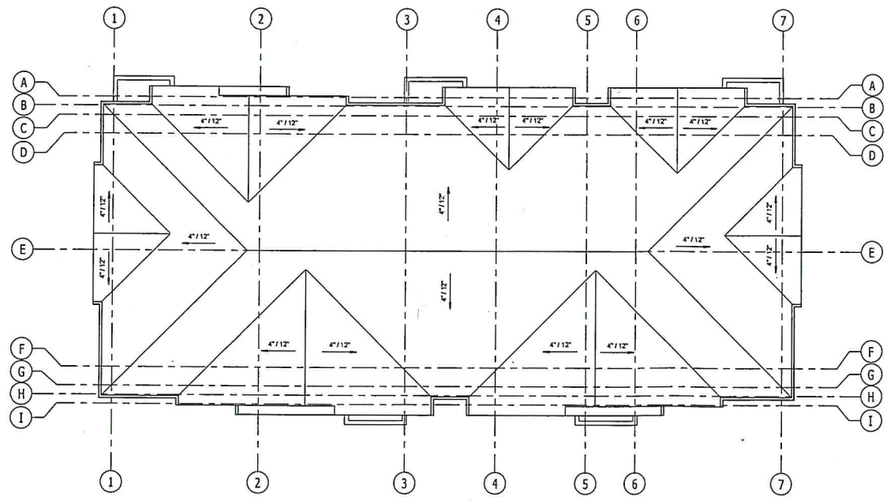
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A-2.0

OVERALL FLOOR PLAN - BUILDING A



1 OVERALL FLOOR PLAN - BUILDING B SCALE: 1/8" = 1'-0"



2 ROOF PLAN - BUILDING B SCALE: 1/8" = 1'-0"

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modesto california 95354
phn 559 521 2112

RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

LOCATION
3318 POCKET AVENUE
RIVERBANK, CA
95367

PARCEL
075-090-063

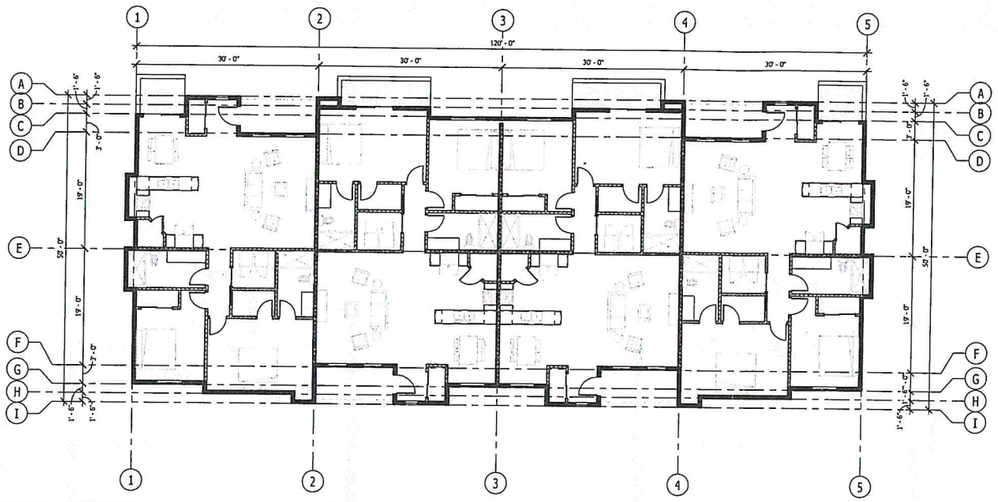
OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBER

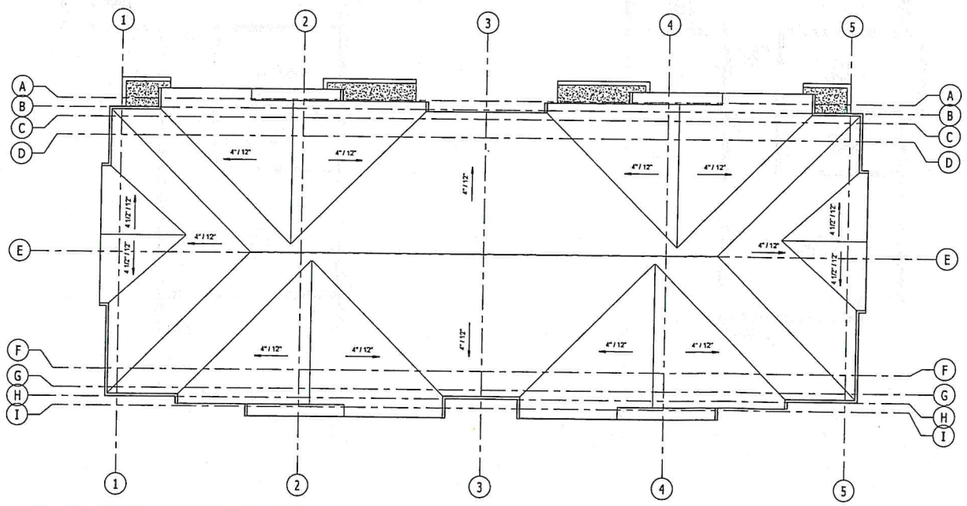
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COMMARCH #

A-2.1

OVERALL FLOOR PLAN - BUILDING B



1 OVERALL FLOOR PLAN - BUILDING C — SCALE: 1/8" = 1'-0"



2 OVERALL ROOF PLAN - BUILDING C — SCALE: 1/8" = 1'-0"

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3318 POCKET AVENUE
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95367

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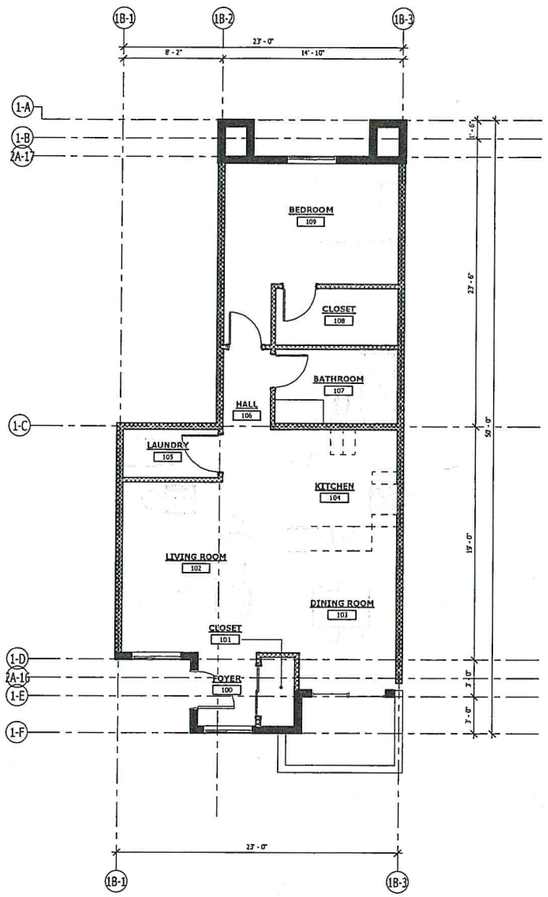
OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBER

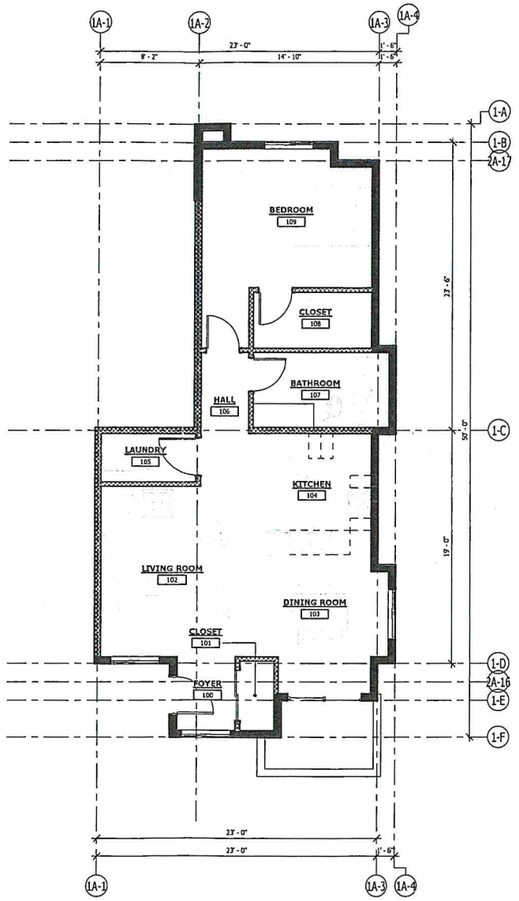
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A-2.2

OVERALL FLOOR PLAN - BUILDING C



2 ONE BED / ONE BATH - MIDDLE UNIT (1-1-M) SCALE: 1/4" = 1'-0"



1 ONE BED / ONE BATH - END CAP UNIT (1-1-E) SCALE: 1/4" = 1'-0"

GROSS UNIT AREA - ONE-BED / ONE BATH UNIT

NUMBER	NAME	AREA
1A - ONE-BEDROOM / ONE BATHROOM - END UNIT		
100	FOYER	36 SF
101	CLOSET	21 SF
102	LIVING ROOM	178 SF
103	DINING ROOM	132 SF
104	KITCHEN	110 SF
105	LAUNDRY	36 SF
106	HALL	47 SF
107	BATHROOM	80 SF
108	CLOSET	52 SF
109	BEDROOM	197 SF
		889 SF
1B - ONE-BEDROOM / ONE BATHROOM - CENTER UNIT		
100	FOYER	36 SF
101	CLOSET	21 SF
102	LIVING ROOM	178 SF
103	KITCHEN	109 SF
103	DINING ROOM	119 SF
105	LAUNDRY	36 SF
106	HALL	46 SF
107	BATHROOM	68 SF
108	CLOSET	52 SF
109	BEDROOM	179 SF
		845 SF

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3318 POCKET AVENUE
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95367

PARCEL
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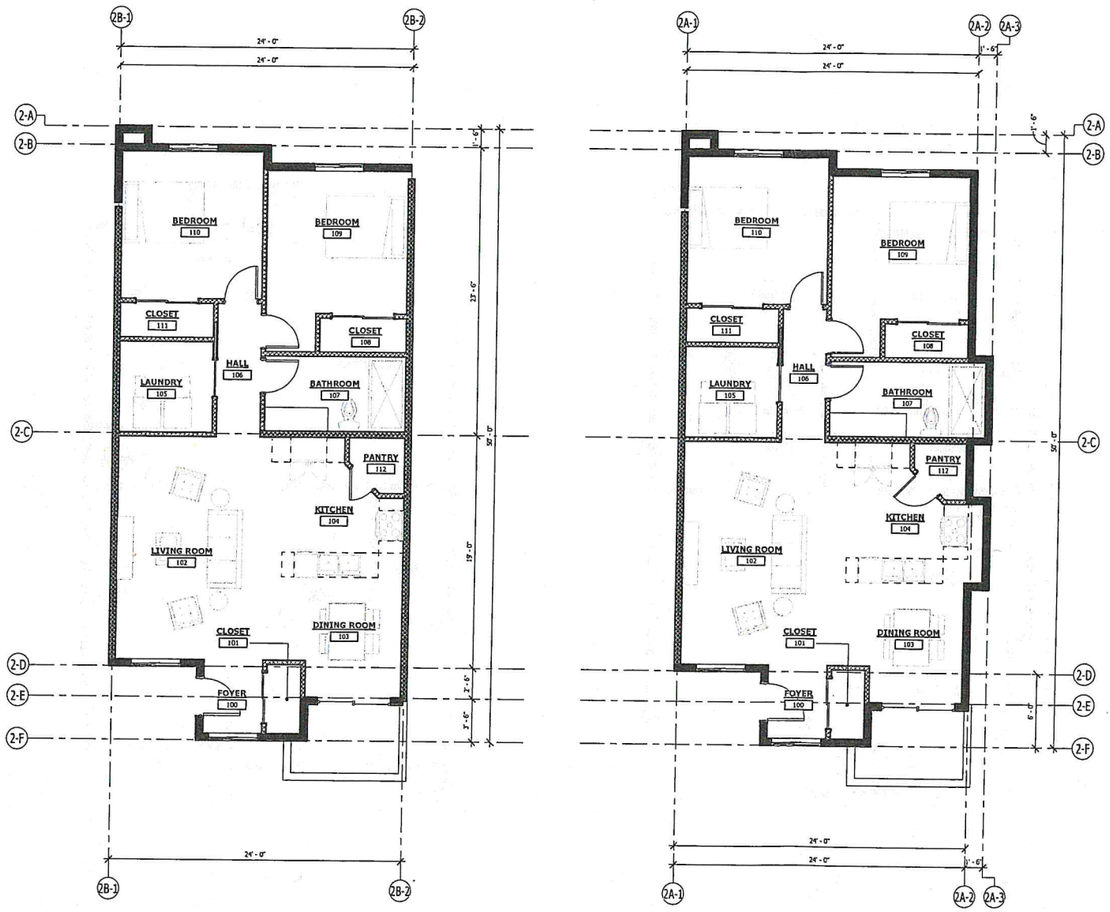
OWNER
MAHESH KHATWANI

BUILDING PERMIT SUBMITTAL

DATE
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COMMARCH #
21-222

A-3.0

UNIT TYPE 1 - FLOOR PLAN



2 TWO BED / ONE BATH - MIDDLE UNIT (2-1-M) SCALE: 1/4" = 1'-0"

1 TWO BED / ONE BATH - END CAP UNIT (2-1-E) SCALE: 1/4" = 1'-0"

GROSS UNIT AREA - TWO BED / ONE BATH UNIT

NUMBER	NAME	AREA
2A - TWO-BEDROOM / ONE BATHROOM - END UNIT		
100	FOYER	36 SF
101	CLOSET	21 SF
102	LIVING ROOM	226 SF
103	DINING ROOM	110 SF
104	KITCHEN	134 SF
105	LAUNDRY	62 SF
106	HALL	42 SF
107	BATHROOM	90 SF
108	CLOSET	24 SF
109	BEDROOM	162 SF
110	BEDROOM	154 SF
111	CLOSET	25 SF
112	PANTRY	22 SF
		1111 SF
2B - TWO-BEDROOM / ONE BATHROOM - CENTER UNIT		
100	FOYER	36 SF
101	CLOSET	21 SF
102	LIVING ROOM	226 SF
103	DINING ROOM	111 SF
104	KITCHEN	119 SF
105	LAUNDRY	62 SF
106	HALL	42 SF
107	BATHROOM	79 SF
108	CLOSET	24 SF
109	BEDROOM	163 SF
110	BEDROOM	153 SF
111	CLOSET	23 SF
112	PANTRY	21 SF
		1085 SF

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LOCATION
3318 POCKET AVENUE
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PARCEL
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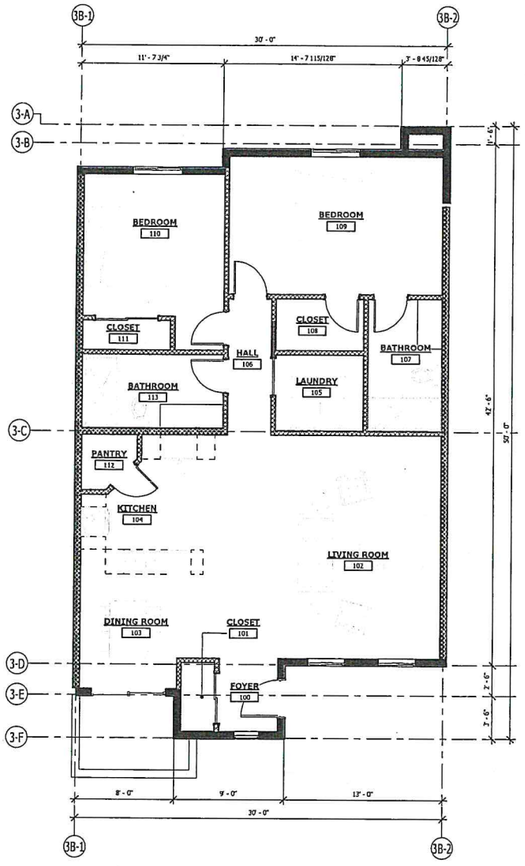
OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBER

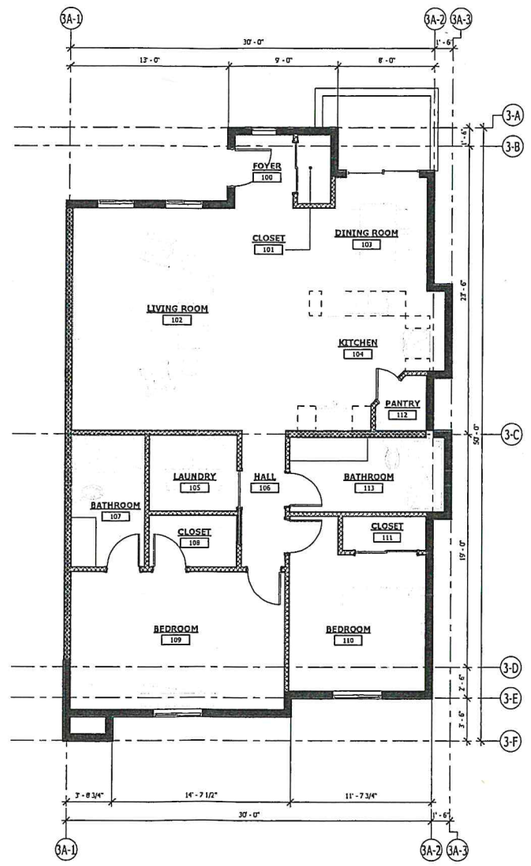
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21-222

A-3.1

UNIT TYPE 2 - FLOOR PLAN



2 TWO BED / TWO BATH - MIDDLE UNIT (2-2-M) SCALE: 1/4" = 1'-0"



1 TWO BED / TWO BATH - END CAP UNIT (2-2-E) SCALE: 1/4" = 1'-0"

GROSS UNIT AREA - TWO BED / TWO BATH UNIT

NUMBER	NAME	AREA
3A - TWO-BEDROOM / TWO BATHROOM - END UNIT		
100	FOYER	36 SF
101	CLOSET	22 SF
102	LIVING ROOM	340 SF
103	DINING ROOM	105 SF
104	KITCHEN	135 SF
105	LAUNDRY	50 SF
106	HALL	44 SF
107	BATHROOM	72 SF
108	CLOSET	35 SF
109	BEDROOM	217 SF
110	BEDROOM	157 SF
111	CLOSET	24 SF
112	PANTRY	22 SF
113	BATHROOM	90 SF
		1347 SF
3B - TWO-BEDROOM / TWO BATHROOM - CENTER UNIT		
100	FOYER	27 SF
101	CLOSET	22 SF
102	LIVING ROOM	335 SF
103	DINING ROOM	110 SF
104	KITCHEN	120 SF
105	LAUNDRY	50 SF
106	HALL	44 SF
107	BATHROOM	72 SF
108	CLOSET	35 SF
109	BEDROOM	218 SF
110	BEDROOM	160 SF
111	CLOSET	21 SF
112	PANTRY	21 SF
113	BATHROOM	79 SF
		1323 SF

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RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

LOCATION
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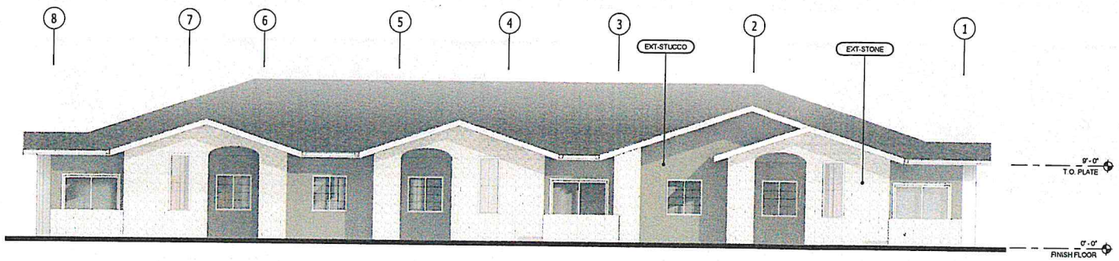
OWNER
MAHESH KHATWANI

BUILDING ARCHITECTURE

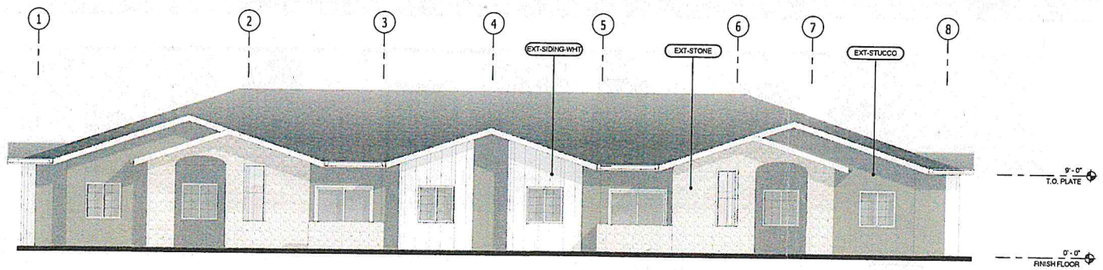
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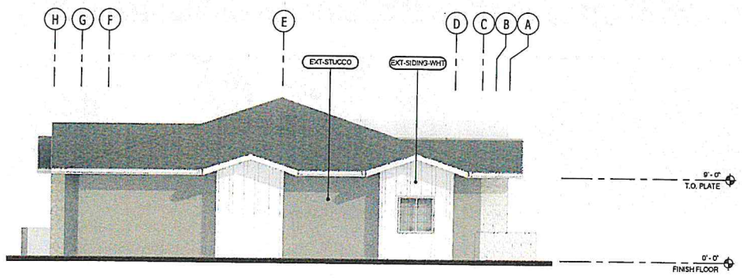
UNIT TYPE 3 - FLOOR PLAN



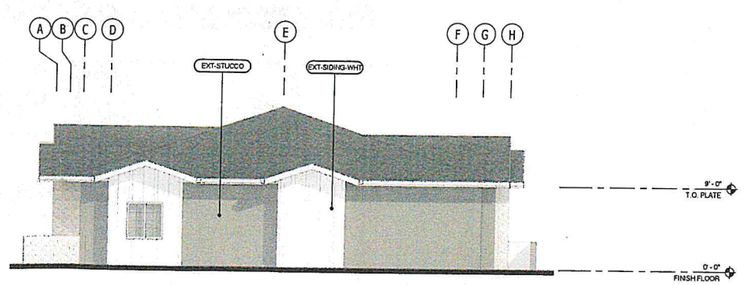
1 BUILDING A - FRONT ELEVATION — SCALE: 3/16" = 1'-0"



3 BUILDING A - REAR ELEVATION — SCALE: 3/16" = 1'-0"



2 BUILDING A - SIDE ELEVATION — SCALE: 3/16" = 1'-0"



4 BUILDING A - SIDE ELEVATION 2 — SCALE: 3/16" = 1'-0"

EXTERIOR FINISH SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL
EXT-SIDING-WHT	5/8" FIBER CEMENT SIDING	JAMES HARDIE	HARDI-PLANK LAP SIDING - VERTICAL COLOR: WHITE
EXT-STONE	ARCHITECTURAL VENEER STONE	EL DORADO STONE	LIMESTONE COLOR: GRAND BANKS
EXT-STUCCO	7/8" - 3 COAT STUCCO SYSTEM WITH ELASTOMERIC PAINT FINISH	-	LIGHT SAND FINISH COLOR: POPCORN

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RIVERBANK SENIOR LIVING

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LOCATION
7318 POCKET AVENUE
~
RIVERBANK, CA
95367

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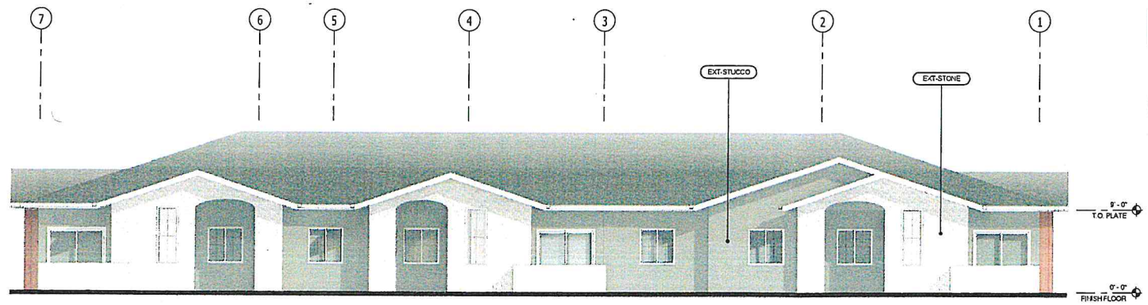
OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBERS

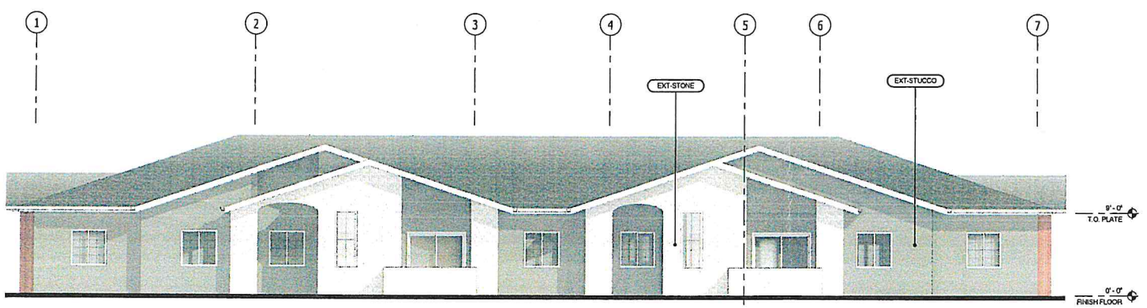
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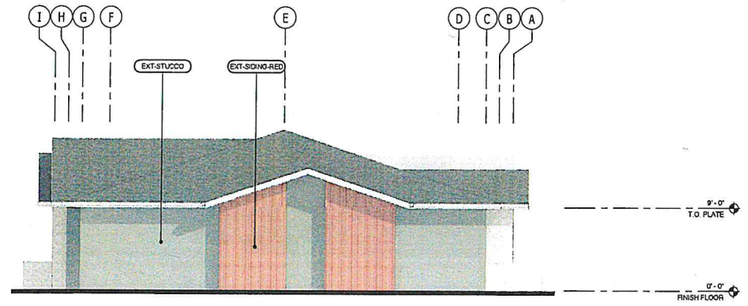
EXTERIOR ELEVATIONS - BUILDING A



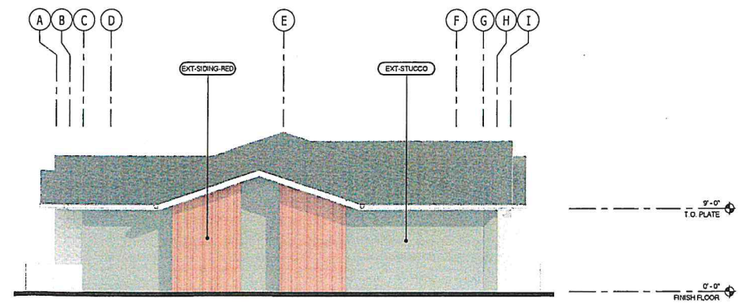
1 BUILDING B - FRONT ELEVATION — SCALE: 3/16" = 1'-0"



2 BUILDING B - REAR ELEVATION — SCALE: 3/16" = 1'-0"



3 BUILDING B - SIDE ELEVATION — SCALE: 3/16" = 1'-0"



4 BUILDING B - SIDE ELEVATION 2 — SCALE: 3/16" = 1'-0"

EXTERIOR FINISH SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL
EXT-SIDING-RED	5/8" FIBER CEMENT SIDING	JAMES HARDIE	HARDI-PLANK LAP SIDING - VERTICAL COLOR: RED
EXT-STONE	ARCHITECTURAL VENEER STONE	EL DORADO STONE	LIMESTONE COLOR: GRAND BANKS
EXT-STUCCO	7/8" - 3-COAT STUCCO SYSTEM WITH ELASTOMERIC PAINT FINISH	--	LIGHT SAND FINISH COLOR: PEPPERCORN

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RIVERBANK SENIOR LIVING

SENIOR LIVING RESIDENTIAL UNITS

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PARCEL
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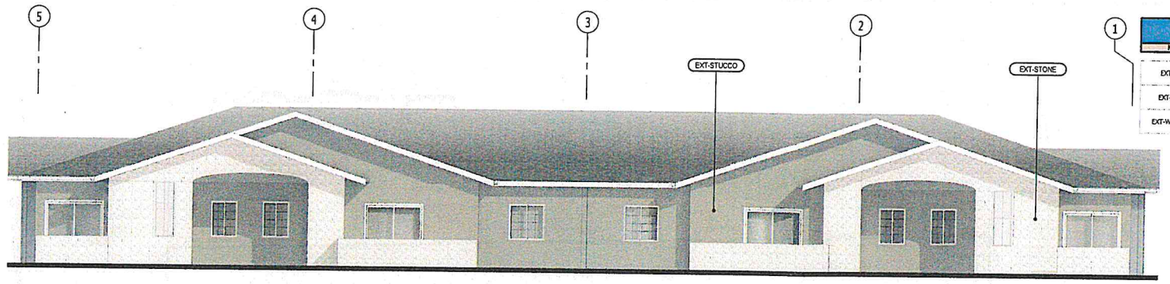
OWNER
HARISH KHATWANI

BUILDING PERMIT NUMBER

DATE:
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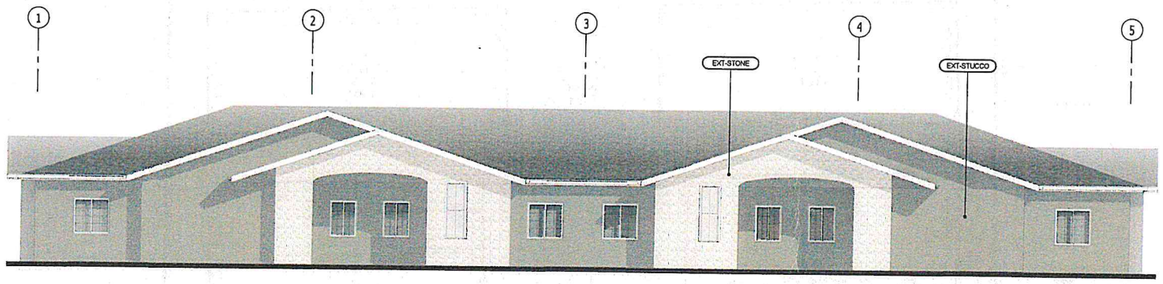
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EXTERIOR ELEVATIONS - BUILDING B

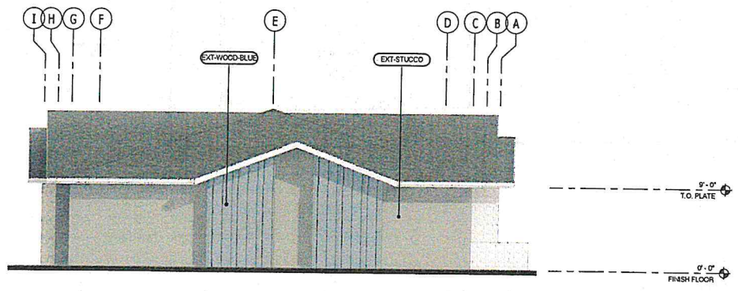


EXTERIOR FINISH SCHEDULE			
MARK	DESCRIPTION	MANUFACTURER	MODEL
EXT-STONE	ARCHITECTURAL VENEER STONE	EL DORADO STONE	HARDI-PLANK LAP SIDING - VERTICAL COLOR: BLUE
EXT-STUCCO	7/8" - 3 COAT STUCCO SYSTEM WITH ELASTOMERIC PAINT FINISH	-	LIGHT SAND FINISH COLOR: PEPPERCORN
EXT-WOOD-BLUE	5/8" FIBER CEMENT SIDING	-	HARDI-PLANK LAP SIDING - VERTICAL COLOR: BLUE

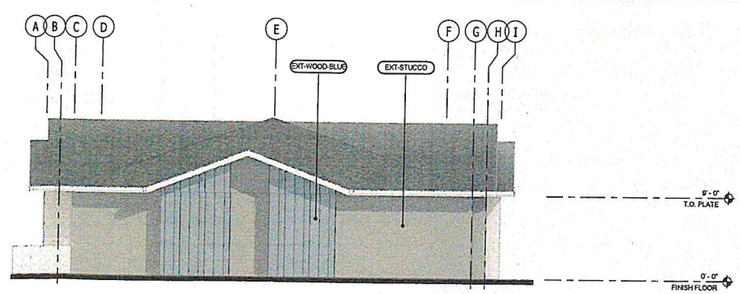
1 BUILDING C - FRONT ELEVATION SCALE: 3/16" = 1'-0"



3 BUILDING C - REAR ELEVATION SCALE: 3/16" = 1'-0"



2 BUILDING C - SIDE ELEVATION SCALE: 3/16" = 1'-0"



4 BUILDING C - SIDE ELEVATION 2 SCALE: 3/16" = 1'-0"

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RIVERBANK SENIOR LIVING

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LOCATION
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PARCEL
073-090-063

OWNER
MAHESH KHATWANI

BUILDING PERMIT NUMBER

DATE
3/20/2023 11:33:00 AM
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A-4.2

EXTERIOR ELEVATIONS - BUILDING C

CITY OF RIVERBANK
PLANNING COMMISSION

STAFF REPORT

ITEM NO: 3.3 **August 15, 2023**

APPLICATION: **Use Permit 01-2023 (Dept. File #23-0001) – Aemetis Advanced Products Riverbank, Inc., 5300 Claus Road, Modesto 95357 – (APN 062-031-005 & -011).** The project, located at the northeast corner of Claus Road and Claribel Road in the City of Riverbank, is a Use Permit for a Sustainable Aviation Fuel/Renewable Diesel Production Plant at the Riverbank Industrial Complex. The plant is expected to recycle fats and oils into a low carbon fuel and bring 50 new jobs to the City. The proposed project will not have a significant effect on the environment and an Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR has been prepared.

PROJECT LOCATION: 5300 Claus Road (APNs: 062-031-005 & -011)

PROPERTY OWNER: United States of America - Army

APPLICANT: Aemetis Advanced Products Riverbank, Inc.
5300 Claus Road, Box #5
Modesto, CA 95357

REPRESENTATIVE: Jarrett Hollis
Vice President of Projects
Aemetis Inc.

GENERAL PLAN: Industrial/Business Park (I/BP)

ZONING: Riverbank Industrial Complex (RIC) Specific Plan, RAAP-1, RAAP-2, RAAP-R

ENVIRONMENTAL DETERMINATION: An Addendum to the Riverbank Army Ammunition Plant Specific Plan EIR has been prepared pursuant to CEQA Guidelines for the Planning Commission to review and consider.

PROJECT PLANNER: Donna M. Kenney, Planning and Building Manager

RECOMMENDATION: Review the RAAP EIR and Addendum, approve the Addendum and approve Use Permit 01-2023 for Aemetis subject to the conditions in Resolution 2023-010.

ACRONYMS:
CEQA – California Environmental Quality Act
CUP – Conditional Use Permit or Use Permit
FEIR – Final Environmental Impact Report
GPD – Gallons Per Day
GPM – Gallons Per Minute
NFPA – National Fire Protection Association
RAAP - Riverbank Army Ammunition Plant Base
RIC – Riverbank Industrial Complex
RMC – Riverbank Municipal Code
RFQ – Request For Qualifications
SAF/RD – Sustainable Aviation Fuel/Renewable Diesel
SF or sf – Square Feet or Foot

I. EXECUTIVE SUMMARY:

The applicant, Aemetis Advanced Products Riverbank, Inc. ("Aemetis"), proposes to construct and operate a Sustainable Aviation Fuel/Renewable Diesel Production Plant to recycle oils and fats which are expected to arrive by truck and/or train. With proper conditions the proposed use is not anticipated to adversely impact traffic, neighboring businesses at the Riverbank Industrial Complex, nor residential neighbors in Stanislaus County.

II. BACKGROUND AND ANALYSIS:

Site History:

The Riverbank Army Ammunition Plant ("RAAP") was formerly "… a federal, government-owned, contractor-operated industrial installation under the jurisdiction of the United States Army. The Plant began operation in 1943 as an aluminum reduction plant supplying military requirements. It closed in 1944 and was used for storage for the 8 years that followed. In 1952, the Norris Thermador Corporation, known as NI Industries, Inc. ("NI") was contracted by the US Army to manage the property and produce ammunition supplies for use by the military. As production waned, NI was permitted to lease excess space on the site to private tenants through the US Army's Armament Retooling and Manufacturing Support (ARMS) program. Tenants are mostly involved in light and heavy industry, including plastics recycling, steel rebar coating, filtration systems manufacturing, and oil recycling" (Riverbank Army Ammunition Plant Base Reuse Plan 2008). The Reuse Plan envisions an industrial business park where traditional and new "green" and environmentally-conscious businesses can thrive and grow.

In more recent years, the City of Riverbank became the property manager due to the fact it would be acquiring the Plant from the Army after plant contamination remediation is complete. In 2018, the City released an RFQ and Aemetis was selected to become the property manager. In April 2022, the existing tenant leases were transferred to Aemetis. While previous improvements needed by these tenants were reviewed and approved solely by the Army, improvements are now applied for and permitted through the City with a final approval by the Army until it no longer controls the site. The City has a contract with West Coast Code Consultants (WC-3) to conduct plan checks and then inspect the tenant improvements as they are constructed. The Riverbank Public Works Director is currently the interim manager of the site.

Project Description:

The entire Riverbank Industrial Complex (RIC) is approximately 140 acres (Exhibit A). The proposal is to construct an SAF/RD production facility on about 29 acres of the RIC, to be located primarily in the undeveloped portion of the RIC south of the Hetch Hetchy power lines and north of the existing built up structures. The Facility will also include 3,500 sf of office space and 13,665 sf of warehouse space (Exhibit B). The construction is expected to be complete approximately 24 months after it begins. The plan is to operate the plant 24 hours per day and 7 days per week. 50 employees are expected to be hired.

Water:

One source of the facility's process water will be from the onsite recycling of process wastewater. Aemetis currently plans to obtain the additional process water it needs from onsite wells at the RBAAP rather than from the City's water supply. The facility may also include a connection to the City's water supply at Claus Road at the north end of the property as a back-up to the wells. Estimated water usage for the facility is 432,000 gpd (300 gpm which includes 60 gpm of recycled water and 240 gpm from on-site wells).

A project is currently on-going to upgrade the water distribution system at the RBAAP, including a study of the existing water tower and an analysis of the amount of water required for fire safety. More details are provided below under Fire District.

Fire District:

The US Army has historically excluded local Fire personnel from reviewing projects or participating in site visits at the RBAAP. This has deprived local Fire agencies of the fees/funding for the resources it would need to respond to an industrial fire at the plant. Now that the City is the permitting agency, it includes Stanislaus Consolidated Fire District ("Fire District", "Fire") in its RBAAP project review process. The Fire District is now an active City partner in project reviews and has toured the site with Aemetis representatives on several occasions.

The Fire District is requiring that the facility will be designed in accordance with the 2022 California Fire Code and with NFPA 20, 22, 24, and 30 guidelines (see Acronyms above. As part of the design, the facility will have its own on-site firefighting equipment and fire protection features like a water storage tank and a new firewater loop. The final design and requirements will be submitted to the City and Fire District for review and approval as part of the building permit process. A list of requirements from Fire on this Use Permit application have been included in the Conditions of Approval of Resolution 2023-010 (Attachment 1).

Sewage:

The site will have its own wastewater treatment plant for process wastewater. Cleaned water is to be reused in the manufacturing process. There will be no discharge of this waste to the City's facility except as emergency back-up. Sanitary usage from the restrooms and breakroom will connect to the City's facility.

Storm Water:

Stormwater will be captured in dedicated stormwater storage ponds and used to supply water to the facility. The facility's wastewater treatment plant will be designed to treat any hydrocarbons or contaminants if found in the stormwater.

Noise and Odors:

The City of Riverbank's Municipal Code includes a noise ordinance with applicable noise limits. Aemetis is incorporating these limits into the planning and design of the facility and will ensure the facility fully complies with these limits. If required to meet the limits, the design will include dampening or soundproofing.

Aemetis will include several design features for its facility to minimize the potential for odors from feedstocks or products, including:

- Tanks will either be floating roof with double seals (meaning no contact with the atmosphere so no odor release) or have a vapor capture system (for fixed roofs) that will capture and eliminate any odors.
- Loading and unloading stations for both truck and rail will have a vapor recovery system to capture vapors which might have odor.
- Captured vapors from the facility will be routed through a thermal oxidizer that will destroy the compounds which might have odors.
- The facility will have an ongoing fugitive emissions testing program to detect and repair emissions from valves and flanges.

The exact features will be detailed on plans for building permit applications to the City.

Traffic:

In the first phase of operation, the plant will focus on a feedstock of oils and fats. This feedstock may be from local sources or could come from as far away as the existing Aemetis plant in India. The Riverbank facility will be able to receive this feedstock by train (16 rail cars/day) or truck (86 iso-container trucks/day or 68 tanker trucks/day). If the feedstock is received by train, there will be two deliveries per day. The train cars would arrive by BNSF switchyard in Riverbank and then be transported to the site on the Sierra Northern railroad spur. The BNSF cars may arrive through any of its lines or affiliates' lines throughout California and may vary over time. In the second phase of operation, the feedstock may include wood chips and orchard waste which would normally be burned in the field. It is anticipated this feedstock will come from local sources throughout the valley.

The Plant will have two entrances for feedstock trucks – one at the main gate to the RBAAP and a second entrance farther north on Claus Road. The area at the main gate, including the primary traffic route to the gate, will be widened and improved as part of the North County Corridor Project. Aemetis will monitor and coordinate with Stanislaus County Public Works on those improvements.

In addition, Aemetis is engaging a traffic engineer to determine the specific needs for road improvements at both entrances and will provide an appropriate design to address any concerns of the City. Applications for City construction permits will contain a more detailed design than is available at this early stage of the project. The City will review the traffic engineer's evaluation and proposed plans and Aemetis agrees to implement any improvements required by the City-approved plans.

Hazardous Materials:

Spill prevention plans are required by several federal and state laws. Aemetis will submit applications and/or plans as required by those laws to all applicable agencies and comply with all laws including submitting to the Stanislaus County Department of Environmental Resources and Environmental Health Services a Hazardous Materials Business Plan, an Emergency Action Plan, and a SPCC plan (as applicable).

Aemetis will eventually own the site and has the ability to decommission it if operations cease. If operations cease and the site is sold, the site will be safely decommissioned, moth-balled, or demolished by removing all the equipment and electrical systems. All soil, roads, and foundations will be tested for contamination and remediated, if necessary.

Permits and Regulatory Programs:

The Use Permit is just the first step in the approval process – determining if the Aemetis project, with conditions, is a good fit in this zoning district. If the Use Permit is approved, the facility will be subject to or potentially subject to the permit requirements and

regulatory programs listed below. All of these agencies were contacted during the staff review process and asked to provide comments and/or conditions of approval.

- City of Riverbank Use Permit (this application and public hearing)
- City of Riverbank Architecture and Site Plan Review
- City of Riverbank Parcel Map
- City of Riverbank Building Permits
- City of Riverbank Business License
- City of Riverbank Tree Ordinances (where applicable)
- City of Riverbank Water and Sewer connections
- Stanislaus County and/or City of Riverbank Encroachment Permit
- Stanislaus County, Department of Environmental Resources, Environmental Health Services: Hazardous Materials Business Plan, Emergency Action Plan, SPCC plan (as applicable)
- Stanislaus County, Department of Agriculture & Weights and Measures: Scale Permit
- Stanislaus County Consolidated Fire District: California Fire Code
- San Joaquin Valley Air Pollution Control District (SJVAPCD): Air emissions permits (authorities to construct and permits to operate)
- San Francisco Public Utility Commission (SFPUC): Application for Land or Right-of-Way Access Permit for new pipes (if needed)
- California Air Resources Board (CARB): Low Carbon Fuel Standard (LCFS), Pathway Certification
- Central Valley Regional Water Quality Control Board (Central Valley RWQCB): Stormwater Pollution Prevention Plans (construction and operation), Waters of the State permit (wetlands disturbance if applicable), Wastewater discharge permits (if applicable)
- CalOSHA: Construction permits for structures and pits; operating permits for pressure vessels; compliance with design standards and regulatory programs
- California Department of Toxic Substances Control (DTSC): California Accidental Release Program (CalARP) and Federal Risk Management Program (RMP) CalARP/RMP plan (if applicable)
- California Energy Commission: Award of grant funds (if applicable)
- U.S. Environmental Protection Agency: Renewable Fuels Standard Facility Registration; Fuel
  Registrations; Low Carbon Renewable Fuel Pathway Approval (if applicable)
- U.S. Environmental Protection Agency (US EPA): Hazardous Waste Generator ID
- U.S. EPA, DTSC, RWQCB, U.S. Army: Soils Management Plan
- U.S. Army: Compliance with lease provisions, including approval of physical modifications

III. GENERAL PLAN CONSISTENCY

The Aemetis project is consistent with the following general plan policies:

Policy LAND-4.4 “Industrial uses that create noise, air emissions, traffic or other substantial incompatibilities with residential uses shall be buffered or otherwise designed to avoid such impacts to new and existing residential uses.” *The location of the Aemetis facility is entirely within the existing Riverbank Industrial Complex site. The footprint of Aemetis’ facility is generally more than 150 feet from the east property line and further from the other property lines. When the County’s buffer policy applies (which it does not in this case), it regulates uses within the 150-foot buffer zone between industrial and residential uses. County buffers only apply to other County agency projects.*

Policy LAND-4.5 “The City will review industrial development applications and apply appropriate conditions to ensure compatibility with nearby existing and planned land uses.” *After reviewing the Aemetis application, the City is requiring a Use Permit to ensure compatibility with adjacent existing and future uses. The resulting conditions of approval are listed in Resolution 2023-007 (Attachment 1).*

Policy LAND-6.2 “Development applications shall be reviewed and approved only if consistent with the Riverbank General Plan.” *The Aemetis project is consistent with Land and Circulation policies in the General Plan.*

Policy CIRC-4.1 “The City will work with relevant public agencies and the railroad to appropriately regulate the movement of truck traffic and hazardous materials throughout the City.” *The City has been working with relevant public agencies during the project review process and will continue to work with them during the post-approval process if this CUP is approved.*

IV. ENVIRONMENTAL DETERMINATION:

The project will have minimal impact upon the environment and an Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR (Attachment 2B) has been prepared by Trinity Consultants, Inc. pursuant to CEQA Guidelines. The purpose of this Addendum (Attachment 3) is to describe the facility and its impacts and to analyze them in the context of the Specific Plan EIR. As a general matter, once an EIR has been certified for a proposed project, “no subsequent EIR shall be prepared” unless specific criteria in Section 15162 of the CEQA Guidelines are met.

This Addendum applies the Section 15162 standard to each significance threshold that is normally included within a CEQA checklist. Based on the analysis provided in the Specific Plan EIR, the Facility does not include changes from the Specific Plan that would require major changes to the existing EIR due to new significant adverse environmental effects over those determined by the City in the Specific Plan EIR. Based on this, CEQA states the “lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions [to the EIR] are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have

occurred." CEQA Guidelines Section 15164(a). In addition, "[t]he decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project." CEQA Guidelines Section 15164(d).

V. PUBLIC NOTICE:

The Planning Commission public hearing notice was published in the Riverbank News on July 5, 2023 and was posted at City Hall North, South, Post Office and Community Center on July 5th. It was published on the City website on July 5th. In addition, the Applicant posted a Notice of Development Permit Application at 5300 Claus Road on Friday, July 7, 2023. Also, public notice mailers were distributed to residents and business within 300-feet of the Project site in accordance with City standard practices on Monday, July 3rd. At the time of writing this Staff Report (July 14, 2023), City staff had not received any written public comment, but any written comments received subsequent to this date shall be supplied to the Commission on the day of the meeting.

Due to technical difficulties, the agenda did not post to the City's website 72 hours before the meeting. Therefore, at their meeting of July 18, the Planning Commission received a short presentation of the item and the public comment period on the item was opened and closed. The Commission received informational packets from an Oakdale group called "We the People" that was distributed at this meeting and several people spoke. During public comment, questions were asked and are answered below:

1. There are no plans for the City to annex, or prezone to commercial zoning, the County properties to the west across Claus Road.
2. A carbon capture well is not a part of this review or approval.
3. A vapor capture system is proposed to prevent any odors from the facility.

The Planning Commission voted 5-0 to continue this item to the meeting of August 15, 2023. Staff then prepared jump drives for the Commissioners containing the Specific Plan DEIR (Attachment 2a), the Specific Plan FEIR (Attachment 2b), the RAAP Specific Plan (Attachment 2c), City Council Resolution 2014-006 (Attachment 2d), certifying the RAAP Specific Plan EIR, making CEQA findings, and adopting a Mitigation Measures and Monitoring Program, and the Addendum to the FEIR (Attachment 3) so they could begin reviewing these large documents before the next meeting.

VI. RECOMMENDATION:

That the Planning Commission consider and approve the CEQA Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR and approve the Use Permit pursuant to the performance standards and conditions contained in attached proposed Resolution 2023-010.

VII. ATTACHMENTS:

1. Proposed Planning Commission Resolution No. 2023-010
   Exhibit A – Site Plan
   Exhibit B – Floor Plan
2. Riverbank Army Ammunition Plant Specific Plan EIR, which includes:
   a. March 28, 2013, Public Review Draft EIR
   b. November 2013, Final EIR
   c. November 2013, RAAP Specific Plan
   d. City of Riverbank, City Council Resolution 2014-006, certifying the RAAP Specific Plan EIR, making CEQA findings, and adopting a Mitigation Measures and Monitoring Program
3. Addendum to the Riverbank Army Ammunition Plant Specific Plan Final EIR

Respectfully Submitted By:

Donna M. Kenney

_____
Donna M. Kenney
Planning and Building Manager

City of Riverbank
Planning Commission
Resolution No. 2023-010

A Resolution of the Planning Commission of the City of Riverbank
Approving Use Permit 01-2023 for Aemetis Advanced Products Riverbank, Inc.,
Located at 5300 Claus Road, APNs: 062-031-005 & -011

Whereas, the proposed business location for a Sustainable Aviation Fuel/Renewable Diesel Production Plant (the "Facility") is located within the City of Riverbank at 5300 Claus Road (APNs: 062-031-005 & -011) (the "Property"); and

Whereas, the property has a General Plan Land Use Designation of Industrial / Business Park (I/BP); and

Whereas, Industrial / Business Park is the primary land use category for Riverbank to accommodate industrial uses located along major roadways on the periphery of existing and planned neighborhoods during the buildout of the General Plan; and

Whereas, the Use Permit that is approved by these resolutions for Aemetis Advanced Products Riverbank, Inc. ("Aemetis") will allow a Sustainable Aviation Fuel/Renewable Diesel Production Plant use at the Riverbank Industrial Complex on Claus Road, north of Claribel Road and the proposed North County Corridor; and

Whereas, the property has a zoning designation of Riverbank Industrial Complex (RIC) Specific Plan RAAP-1, RAAP-2, RAAP-R; and

Whereas, permitted and conditional uses in the RIC District include commercial and industrial uses which are "green" and environmentally-conscious; and

Whereas, the Aemetis project is consistent with the General Plan and specifically, Policies LAND-4.4, LAND-4.5, LAND-6.2, and CIRC-4.1.

Whereas, the Planning Commission has reviewed the Riverbank Army Ammunition Plant Specific Plan EIR (State Clearinghouse Number 2011022015), including (a) the March 28, 2013, Public Review Draft EIR, (b) the November 2013, Final EIR, (c) November 2013, RAAP Specific Plan, and (d) the City of Riverbank, City Council Resolution 2014-006, certifying the RAAP Specific Plan EIR, making CEQA findings, and adopting a Mitigation Measures and Monitoring Program; and

Whereas, the City of Riverbank is the lead agency pursuant to CEQA for the current project, and the Planning Commission has decision making authority for the City of Riverbank with respect to the project; and

Whereas, the Planning Commission heard this item at their July 18, 2023 meeting, opened public comment, closed public comment, then continued this item to the August 15, 2023 meeting with a 5-0 vote due to technical difficulties with the posting of the agenda; and

Whereas, the Planning Commission has reviewed the CEQA Addendum to the Riverbank Army Ammunition Plant EIR that has been prepared for the project.

Therefore, Be It Resolved that the Planning Commission approves the CEQA Addendum to the RAAP Specific Plan EIR that has been prepared for the Project and directs and authorizes the City of Riverbank Planning Department to add the Addendum to the EIR and to certify the document as approved by the City of Riverbank as lead agency.

Be It Further Resolved that the Planning Commission hereby approves a use permit (CUP 01-2023) for Aemetis Advanced Products Riverbank, Inc. to allow a Sustainable Aviation Fuel/Renewable Diesel Production Plant.

Be It Further Resolved that this Use Permit 01-2023 is subject to the following conditions:

1. The Facility shall comply with the City of Riverbank Standard Conditions as contained in the Planning Commission Resolution 2013-014 and/or receive confirmation from the City of Riverbank Planning or Development Services departments that a specific condition or conditions do not apply to the subject project.

2. The Facility shall comply with the 2022 California Building Standards Code (Cal. Code Regs., Title 24) and energy standards, as may be updated or amended and applicable at the time of Facility construction.

3. The extent of disabled access requirements is based on the new use, project valuation, and extent of upgrades. All new interior construction is required to comply with applicable accessibility requirements of California Building Code, Chapter 11B. It will be determined during building permit submittal whether full accessibility is required or whether the project qualifies for an “Unreasonable Hardship Application” or other exemption or exclusion from Chapter 11B.

4. The Facility shall comply with all applicable mitigation measures in the Riverbank Army Ammunition Plant Specific Plan EIR and Addendum.

5. The Facility shall obtain all required permits and is subject to all regulatory programs of the City of Riverbank, any Special Districts such as Stanislaus Consolidated Fire District, Stanislaus County, the State of California, and the Federal Government.

6. Prior to the issuance of a grading permit for the Facility, the applicant shall determine, to the satisfaction of the Stanislaus County Department of Environmental Resources (“DER”), that a site containing structures has been fully investigated via Phase 1 and/or if necessary, a Phase 2 study. Any discovery of underground storage tanks, former storage tank locations, buried chemicals, buried refuse, or contaminated soil shall be brought to the immediate attention of DER.

7. The applicant shall contact the DER regarding appropriate permitting requirements for hazardous materials and/or wastes. Applicant and/or occupants handling hazardous materials or generating hazardous wastes must notify the DER relative to the following: (CA H&S, Division 20)

   A. Requirements for registering as a handler of hazardous materials in the County and submittal of a Hazardous Materials Business Plan (HMBP) into the California Environmental Reporting System (CERS) by handlers of materials in excess of 55 gallons, 500 pounds of a hazardous material, or of 200 cubic feet of compressed gas;

   B. Generators of hazardous waste must notify DER relative to the:
   (1) quantities of waste generated; and
   (2) proposed waste disposal practices;
   Generators of hazardous waste shall also use the CERS data base to submit chemical and facility information to the DER.

   C. The handling of acutely hazardous materials may require the preparation of a Risk Management Prevention Program which must be implemented prior to operation of the facility. The list of acutely hazardous materials can be found in SARA, Title III, Section §302;

   D. If applicable, notify DER for storing hazardous materials in aboveground tanks;

   E. Requirement to obtain and maintain an active EPA ID number with the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) using Permanent State ID Number Application DTSC Form 1358 (https://dtsc.ca.gov/permanent-state-epa-id-numbers/).

8. The Facility shall provide fire prevention and fire protection resources to the satisfaction of the Stanislaus Consolidated Fire Protection District. These resources are expected to include the following:

   A. Firefighting water storage tank (size to be determined by firewater review);

   B. New firewater loop with hydrants around the site;

   C. Targeted firewater monitors for tanks and critical equipment;

   D. Cooling water spray on critical tanks for cooling;

   E. Foam stations for monitors at fuel storage tanks;

   F. Firewater pumps (electric and diesel in case of power outage);

   G. Firewater jockey pumps (electric and diesel).

   The final design and requirements will be submitted to the City and Fire District for review and approval as part of the building permit process.

9. Pursuant to Stanislaus County Department of Public Works, no access from Claribel Road and no new access south of the proposed improvements shall be allowed in connection with the Facility as they would be in conflict with an existing plan (North County Corridor).

10. Aemetis shall provide the City Planning Department with a report from a Traffic Engineer to document whether any traffic improvements are necessary for the operation of the Facility, which report shall include evaluations of whether Claus Road needs to be widened to accommodate deceleration lanes and stacking areas for vehicles and trucks to stage prior to entering the project's security building, and the location of the security building set back from the roadway to accommodate entering trucks and vehicles without impacting Claus Road traffic.

11. A plan shall be provided indicating how the Facility will be reclaimed if and when operations cease.

12. The City of Riverbank Municipal Code includes a noise ordinance with applicable noise limits. Aemetis shall incorporate these limits into the planning and design of the Facility to ensure the facility fully complies with these limits. If required to meet the limits, the design will include dampening or sound proofing.

13. To the extent required by any lease, deed conditions, or other applicable requirements for a particular parcel of land on which the Facility is located, Aemetis shall prepare a Soil Management Plan for activities that require soil movement and comply with any provisions of the applicable requirement that require submittal of the plan to regulatory agencies for approval before implementing soil disturbance activities. The plan shall contain appropriate procedures for sampling and disposal of soil to account for potential contamination.

14. Aemetis is required to continue coordination with SFPUC Power to resolve the feasibility of adding the additional power load to the location. The existing infrastructure may not support the proposed increased power load. Aemetis will need to resolve the addition of any new power infrastructure and work with the SFPUC to identify and mitigate impacts to the power grid.

15. A SFPUC/HHWP Project Review and Land Use Application must be submitted to Hetch Hetchy Water and Power for any proposed new crossing or work on the SFPUC Right of Way (ROW) prior to commencement. A completed application shall be emailed to: http//row@sfwater.org.

16. The facility will include several design features to minimize the potential for odors from feedstocks or products, including:

    A. Tanks will either be floating roof with double seals (meaning no contact with the atmosphere, and therefore no odor release) or have a vapor capture system (for fixed roofs) that will capture and eliminate any odors.

B. Loading/unloading stations for both truck and rail will have a vapor recovery system that will capture vapors that might have odors.

C. Captured vapors from the plant will be routed through a thermal oxidizer that will destroy the compounds that might cause odors.

D. The Facility will have an ongoing fugitive emissions testing program to detect and repair emissions from valves and flanges.

Definitive plans will be described in the building permit applications submitted for the City's review and approval.

PASSED AND ADOPTED by the Planning Commission of the City of Riverbank at a meeting held on the 15th of August, 2023; motioned by Commissioner _____, seconded by Commissioner _____, and upon roll call was carried by the following vote of _-_:

AYES: Commissioners:

NAYS:

ABSENT:

ABSTAIN:

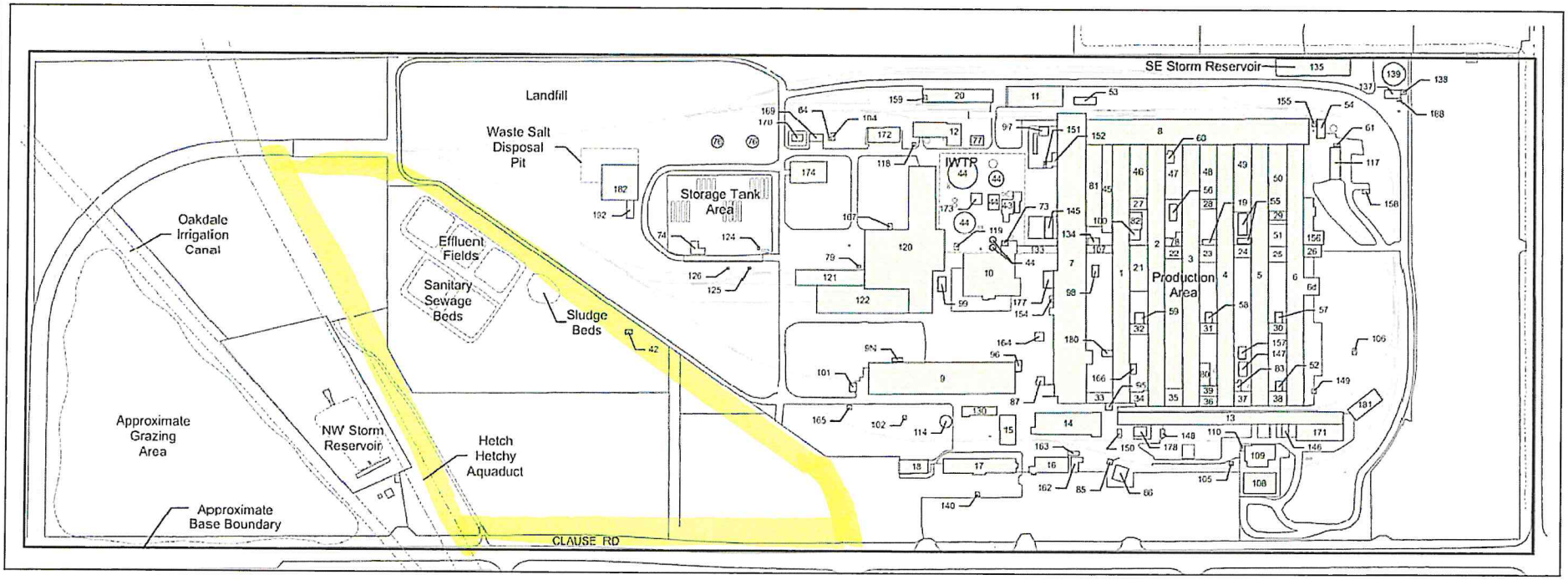
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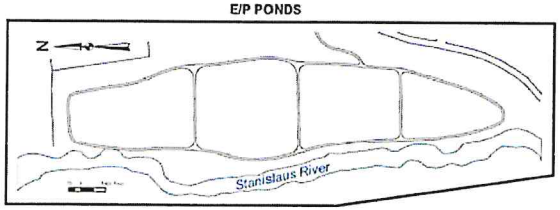
_____
Donna M. Kenney, Secretary
Planning and Building Manager

Approved:

_____
Natasha Basso, Chairperson
Planning Commission

Exhibit A





LEGEND

BUILDINGS

Proposed Site



N

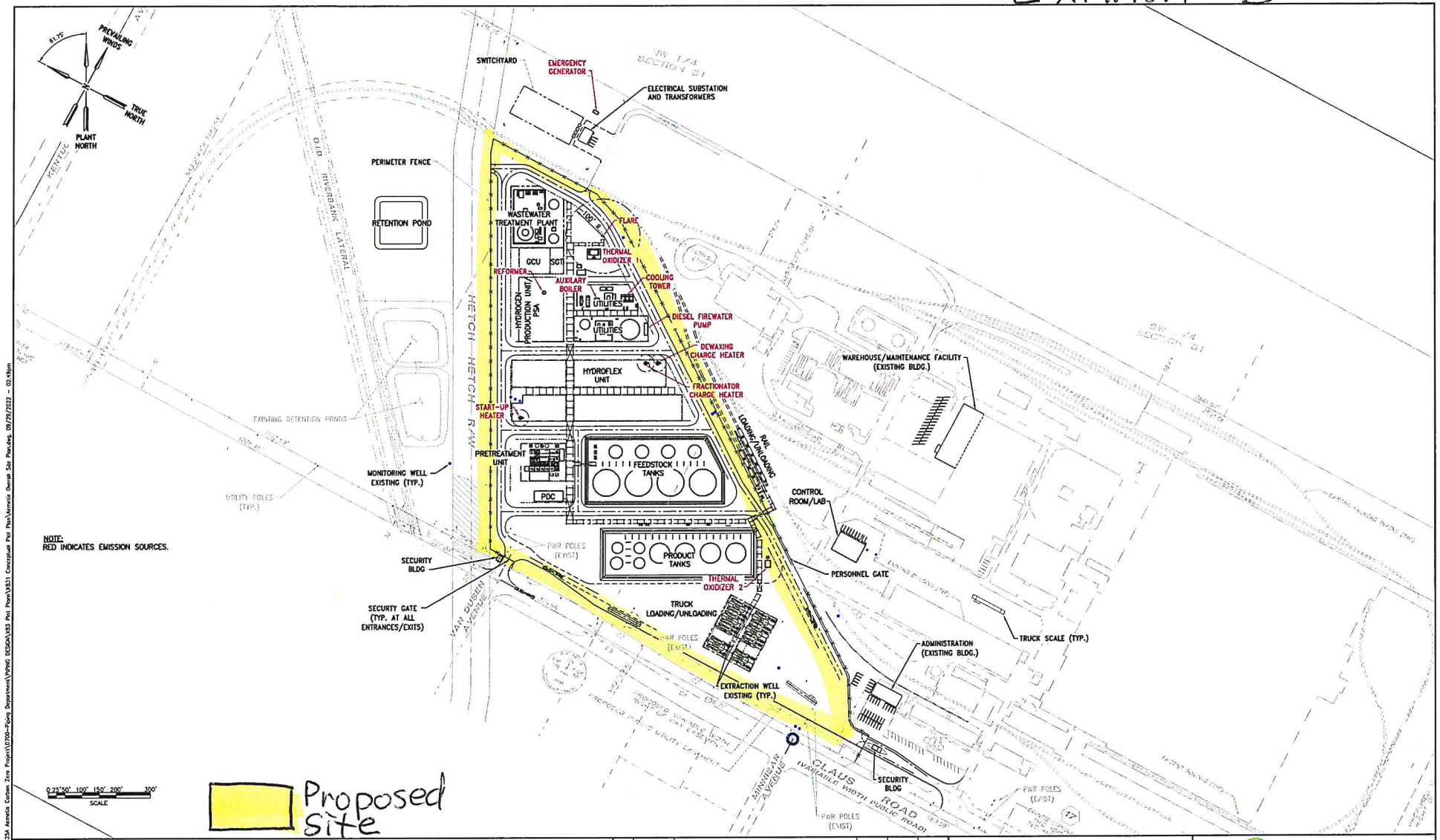
0 150 300 Feet

FIGURE 1-2a
SITE LAYOUT
Riverbank Army Ammunition Plant
Riverbank, California

CH2MHILL

RDD \\LOKI\PROJECTS\RDDG\S\RIVERBANK\MXD\ECP\FIG_1_2A_SITE.MXD FIG_1_2A_SITE.PDF 9/26/2006 09:54:56

Exhibit B



NOTE:
RED INDICATES EMISSION SOURCES.

NOTES:

NO.	DATE	REVISION - DESCRIPTION	BY	CHKD.	APPV.
0	29-SEP-2022	ISSUED FOR USE	LM		JRD

CTCI Americas, Inc.

DWN. BY: LM	DATE: 01/10/2022	CHCK. APPV.	DATE:
CHK. BY:	DATE:	APPV. BY: JRD	DATE:
PROJECT NO: 21E4825A		UNIT NO:	SCALE: 1"= 120'-0"

AEMETIS

PRELIMINARY SITE PLAN LAYOUT
CARBON ZERO 1 PROJECT
RIVERBANK, CALIFORNIA

DWG. NO. XB30-0000-SK01 | SHEET 1/1 | REV. NO. 0

RIVERBANK LOCAL REDEVELOPMENT AUTHORITY

RIVERBANK ARMY AMMUNITION PLANT EIR

State Clearinghouse Number: 2011022015

MARCH 28, 2013 | PUBLIC REVIEW

RIVERBANK LOCAL REDEVELOPMENT AUTHORITY

RIVERBANK ARMY AMMUNITION PLANT EIR

State Clearinghouse Number: 2011022015

March 28, 2013 | Public Review

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1 INTRODUCTION

This Draft Environmental Impact Report (EIR) has been prepared to assess the potential environmental consequences of adopting and implementing the RAAP Specific Plan (Specific Plan). This Draft EIR is intended to inform City decision-makers, other responsible agencies, and the public of the nature of the project. This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA). The Riverbank Local Redevelopment Authority (RLRA) is the lead agency for this project. The Notice of Preparation is included in Appendix A.

The Specific Plan covers an approximately 146-acre area in the southeast portion of Riverbank. The Specific Plan is a planning and regulatory tool available to local governments in the State of California and provides a greater level of specificity than the General Plan. As allowed under California State law (Government Code 65450 et seq.), the City would use the Specific Plan, in part, to implement its adopted General Plan. Although the Specific Plan is broadly consistent with the adopted General Plan, the City will need to adopt minor revisions to the General Plan to ensure that it is fully consistent with the Specific Plan as required under State law.

The project also includes adoption of amendments to the Riverbank General Plan and Zoning Ordinance, changing the current land use designations in the Plan Area and establishing new development standards to replace some of the current zoning provisions applicable to the Plan Area. These amendments must be completed to ensure consistency between the Specific Plan, General Plan, and Zoning Ordinance. This EIR will be used by decision-makers in determining whether or not to adopt the Specific Plan, as well as by the public to clearly understand the environmental implications associated with adoption and implementation of the Specific Plan.

This EIR does not assess the impacts associated with the implementation of the North County Corridor Project (NCC). The purpose of the NCC is to connect SR-99 to SR-120, and one proposed alignment would be located along Claribel Road, adjacent to the RAAP site. Because the location of NCC roadways has not been fully determined, assessing the impacts of the NCC in

the context of buildout of the RAAP Specific Plan would be premature and speculative.

This document is a programmatic EIR, as described in Section 15168 of the CEQA Guidelines. A program-level document is appropriate when a project consists of a series of smaller projects or phases that may be implemented separately. Under the programmatic EIR approach, future projects or phases may require additional, project-specific environmental analysis. In order to identify whether additional analysis would be necessary when the project is implemented, the Lead Agency will need to determine the following:

- Whether the planned characteristics of the project are substantially different from those defined in the Programmatic EIR;
- Whether the project would require additional mitigation measures; or
- Whether specific impacts were not evaluated in sufficient detail in the Program EIR.

If any of these conditions apply, then a project-specific Initial Study or EIR would be necessary to identify how the impacts of the project differ from those identified in this EIR or what additional mitigation measures would be necessary. This EIR is anticipated to provide a basis for future project-level CEQA analysis.

A. Proposed Action

The proposed project, the RAAP Specific Plan, contains land use goals, policies, and development standards for the form and physical design of new development within the Specific Plan Area. The Specific Plan serves as a guide to investment and development of the RAAP site of Riverbank over the next 20 years. The Plan is described in more detail in Chapter 3, Project Description. Since release of the Notice of Preparation, the Evaporation/Percolation Ponds, located on a non-contiguous parcel, has been removed as a project component.

B. Report Organization

This EIR is organized into the following chapters:

- **Chapter 1: Introduction.** Provides a preface and overview describing both the intended use of the document and the review and certification process of both the Plan and the EIR.
- **Chapter 2: Report Summary.** Summarizes environmental consequences that would result from the Plan; describes recommended mitigation measures; and indicates the level of significance of environmental impacts before and after mitigation. A Summary Table is also included for clarity.
- **Chapter 3: Project Description.** Describes the Plan in detail, including the Plan Area location and characteristics; Plan objectives; the planning process used to create the Plan; proposed capital improvements; and implementation.
- **Chapter 4: Environmental Evaluation.** Provides an analysis of the potential environmental impacts of the Plan and presents recommended mitigation measures, if required, to reduce their significance.
- **Chapter 5: Alternatives to the Proposed Project.** Considers three alternatives to the proposed project, including the CEQA-required "No Project Alternative."
- **Chapter 6: CEQA-Required Assessment Conclusions.** Discusses growth inducement, unavoidable significant effects, and significant irreversible changes as a result of the project.
- **Chapter 7: List of Preparers.** Lists the individuals and firms who prepared the EIR.

C. Environmental Review Process

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period. During the

comment period, the public is invited to submit written or e-mail comments on the Draft EIR and/or requested entitlements to the RLRA. The RLRA will also hold one or more public hearings on the Draft EIR during the review period. The public is invited to attend the hearing(s) to offer oral comments on the Draft EIR. Written comments should be submitted to:

Debbie Olson, Executive Director
Riverbank Local Redevelopment Authority
5300 Claus Road
Riverbank, CA 95367

2 REPORT SUMMARY

This summary presents an overview of the analysis contained in Chapter 4.0, Environmental Evaluation. CEQA requires that this chapter summarize the following: 1) areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; 4) implementation of mitigation measures; and 5) alternatives to the project.

A. Project under Review

This Draft EIR provides an assessment of the potential environmental consequences of adoption and implementation of the RAAP Specific Plan (the Plan). This includes development of the site according to adopted land use policies, and development of supporting transportation and utilities infrastructure.

B. Areas of Controversy

The following is a discussion of issues that are likely to be of particular concern to agencies and interested members of the public during the environmental review process. This list does not necessarily identify all areas of concern, but attempts to capture those that are likely to generate greatest interest based on the input received during the scoping process.

- **Air Quality.** The Plan Area is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). As such, this Draft EIR will need to examine existing and post-project emissions of criteria, nuisance odors, and potential health impacts associated with toxic air contaminants. This Draft EIR must also discuss the methodology, model assumptions, inputs and results relating to air quality impacts; emission projections of Plan components, and Plan design elements, mitigation measures, and whether the Plan would cumulatively contribute to a net increase of criteria pollutants or precursor for which the area is in non-attainment. Further, the Plan itself would be subject to a variety of SJVAPCD rules and regulations.

- **Biological Resources**. The Plan Area includes riparian habitats and wetlands that could be impacted by buildout under the Specific Plan. There are also several special-status animals on the RAAP site, such as Swainson's hawks and the western burrowing owl. Potential impacts to these species should be addressed.
- **Hazards and Hazardous Materials.** The Plan Area has industrial sites that have been contaminated by past activities. Impact to humans from the redevelopment of these parcels should be addressed.
- **Hydrology and Water Quality.** The Plan Area includes Oakdale Irrigation District lateral, which eventually drains into the Modesto Irrigation District main canal. Runoff impacts and impacts to drainage facilities are concerns that have been requested to be addressed in the EIR.
- **Transportation and Traffic.** Implementation of the Plan would result in new vehicle and truck trips to and from the RAAP site, which have the potential to impact operations at intersections and along roadway segments in the surrounding area, including the State Highway System. In addition, the Plan would increase vehicular traffic volumes at at-grade highway-rail crossings. The Draft EIR will need to consider mitigation measures to reduce impacts on traffic safety, particularly at railroad crossings.

C. Alternatives to the Project

According to CEQA, an EIR must evaluate a reasonable range of feasible alternatives to the proposed project that would achieve most of the basic project objectives and would avoid or substantially lessen any of the significant impacts of the project. Chapter 5 compares the impacts of three alternatives to those of the project, the No Project Alternative, the Reduced Density Alternative, and the Mixed Use Alternative. The Reduced Density Alternative would be the environmentally superior alternative.

- **Alternative 1 – No Project Alternative.** Under this alternative, which is required to be analyzed under CEQA, the RAAP site would retain its

existing zoning designations and land uses. Since the existing structures could be leased in their current condition, without any further discretionary approval from the City, this alternative assumes re-occupancy of the existing buildings in their current condition.

- **Alternative 2 – Reduced Density Alternative.** This alternative would reduce the intensity of proposed land uses in order to reduce impacts to air quality, cultural resources, noise, and traffic. This alternative would also prohibit demolition of the existing structures, which contribute to the eligibility of a historic district, to avoid impacts to cultural resources.
- **Alternative 3 – Reconfigured Site Plan Alternative.** This alternative would reconfigure the site in order to reduce impacts to biological resources and cultural resources. Specifically, the existing structures would not be demolished, and new buildings would have smaller footprints and heights compared to the proposed project.

D. Summary of Impacts and Mitigation Measures

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed Plan has the potential to generate environmental impacts in a number of areas that could be significant:

- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Noise
- Public Services
- Transportation and Traffic
- Utilities and Service Systems

In Sections 4.1 through 4.17, significant impacts that have been identified for the Plan are numbered. Each numbered impact is considered significant prior to mitigation, unless it is specifically identified as less than significant. Mitigation measures have been suggested to reduce the effects of significant impacts. As shown in Table 2-1, most of the significant impacts would be reduced to a less-than-significant level if the mitigation measures recommended in this report were implemented. However, in some instances the mitigation measure that is recommended would not be sufficient to reduce a significant impact to a less-than-significant level (for example, Impact AIR-1); these impacts are identified as significant and unavoidable after mitigation.

CEQA allows environmental issues for which there is no likelihood of a significant impact to be "scoped out" during the EIR scoping process, and not analyzed further in the EIR. However, all issues have been analyzed in this Draft EIR.

Table 2-1 presents a summary of impacts and mitigation measures identified in this report. It is organized to correspond with the environmental issues discussed in Chapter 4.

The table is arranged in four columns: 1) environmental impacts, 2) significance prior to mitigation, 3) mitigation measures, and 4) significance after mitigation. A series of mitigation measures is noted where more than one measure may be required to achieve a less-than-significant impact. For a complete description of potential impacts and suggested mitigation measures, please refer to the specific discussions in Chapter 4. Additionally, this summary does not detail the timing of mitigation measures. Timing will be further detailed in the mitigation monitoring and reporting program.

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Aesthetics			
Since there are no significant impacts related to aesthetics as a result of the RAAP Site Specific Plan, no mitigation measures are required.			
Agriculture and Forestry Resources			
Since there are no significant impacts related to agricultural and forest resources as a result of the Plan, no mitigation measures are required.			
Air Quality			
AQ-1: Construction of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to an existing or projected air quality violation. Because of the project size and the uncertainty of the construction schedule, construction period emissions would be considered to remain significant with mitigation.	S	AQ-1a: Each individual project component of the Specific Plan shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1b through AQ-1e.	SU
		AQ-1b: SJVAPCD Regulation VIII Control Measures. The following controls shall be required to be implemented at all construction sites: ♦ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover; ♦ All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant; ♦ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking; ♦ With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition;	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		♦ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained; ♦ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden)*; ♦ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant; ♦ Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and ♦ Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.	
		AQ-1c: Enhanced Control Measures. The following measures should be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements): ♦ Limit traffic speeds on unpaved roads to 15 mph; and ♦ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		AQ-1d: Additional Control Measures. The following control measures are strongly encouraged by the SJVAPCD at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions: ♦ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; ♦ Install wind breaks at windward side(s) of construction areas; ♦ Suspend excavation and grading activity when wind exceeds 20 mph *(Regardless of wind speed, and owner/operator must comply with Regulation VIII's 20 percent opacity limitation.)*; and ♦ Limit area subject to excavation, grading, and other construction activity at any one time.	
		AQ-1e: The following measures may be implemented to mitigate emissions from construction equipment exhaust: ♦ Use of alternative-fueled or catalyst-equipped diesel construction equipment; ♦ Minimize idling time (e.g. 5-minute maximum); ♦ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; ♦ Replace fossil-fueled equipment with electrically-driven equivalents (provided they are not run via a portable generator set); ♦ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; and ♦ Implement activity management (e.g. rescheduling activities to reduce short-term impacts).	

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
AQ-2: Operation of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to existing or projected air quality violations.	S	AQ-2: Each individual project component of the Specific Plan shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g. improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs.	SU
Biological Resources			
BIO-1: Buildout of the Plan would involve the demolition or redevelopment of buildings on the RAAP site where the maternity roosts of Townsend's big-eared bats are potentially present. This could result in the destruction, disturbance, or interference with the maternity roots of a special-species bat.	S	BIO-1: Implementation of the Plan shall avoid disturbance to the maternity roosts of special-status bats during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than two weeks in advance of any demolition or construction activity involving concrete breaking or similarly noisy or intrusive activities, that would commence during the pup-rearing season (April 15 through August 31), or winter hibernacula season (October 15 through March 1, depending on weather conditions) a qualified bat biologist, acceptable to the CDFG, shall conduct pre-demolition surveys of all potential special-status bat breeding habitat in the vicinity of the planned activity. Depending on the survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats: 1. If active roosts are identified during pre-construction surveys, a no disturbance buffer will be created by the qualified bat biologist, in consultation with the CDFG, around active roosts during the breeding season. The size of the buffer will take into account factors such as the following: ♦ Noise and human disturbance levels at the project site and the roost site	LTS

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		at the time of the survey and the noise and disturbance expected during the construction activity; ♦ Distance and amount of vegetation or other screening between the project site and the roost; and ♦ Sensitivity of individual nesting species and the behaviors of the bats. 2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required. 3. Pre-construction surveys are not required for demolition or construction activities scheduled to occur during the non-breeding and winter hibernacula season (September 1 through October 15, and March 1 through April 15). 4. Noisy demolition or construction activities as described above (or activities producing similar substantial increases in noise and activity levels in the vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees would be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above. 5. Bat roosts initiated during demolition or construction activities are presumed to be unaffected by the activity, and a buffer is not necessary. 6. Destruction of roosts of special-status bats and overt interference with roosting activities of special-status bats shall be prohibited. 7. The noise control procedures for maximum noise, equipment, and operations identified in Chapter 4.12, Noise, of this EIR shall be implemented. Implementation of the above mitigation measure would reduce potential impacts to the maximum extent practicable.	

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Cultural Resources			
CUL-1: Implementation of the RAAP Specific Plan would alter the significance of an historic resource. By removing individual structures that contribute to the eligibility of an historic district, the RAAP's ability to convey its importance to local and national history is significantly altered, the resource may not be eligible for inclusion on the CRHR.	S	CUL-1: Prior to the demolition of buildings and structures comprising the eligible district, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation shall be conducted for the affected structures. HABS/HAER recordation could include archiving of original plans, undertaking archival research for preparation of a report, making measured drawings, and completing a photographic study of the structures.	SU
Geology and Soils			
Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.			
Greenhouse Gas Emissions			
GHG-1: Development and operation of the Specific Plan could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	S	GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate BPS will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP.	LTS
Mineral Resources			
There are no significant impacts related to agricultural resources as a result of the proposed Plan. Therefore no mitigation measures are required.			
Hazards and Hazardous Materials			
Since there are no significant impacts related to hazardous materials as a result of the Plan, no mitigation measures are required.			

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Hydrology and Water Quality			
There are no significant impacts related to hydrology and water quality as a result of the proposed Plan. Therefore no mitigation measures are required.			
Land Use and Planning			
Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.			
Noise			
NOISE-1: The nearest residential land uses are 110 feet west of the plan area, across Claus Road. Noise levels resulting from on-site activities may exceed City standards for stationary noise sources, as described in General Plan Tables NOISE-2 and NOISE-3 (Tables 4.12-6 and 4.12-7 in this EIR), at nearby residential receivers if the noise generated by such uses are not regulated or adequately mitigated.	S	NOISE-1: In order to reduce noise generated by activities occurring within the RAAP site, the following mitigation measures shall be implemented: ♦ Project level acoustical analyses shall be constructed for noise-generating land uses proposed as part of the Specific Plan. Exterior noise levels at residential land uses interfacing active parks, commercial land uses, or industrial land uses shall be maintained in accordance with the standards presented in the General Plan and Municipal Code. ♦ Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and evening hours (7 a.m. to 10 p.m.). ♦ Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers. ♦ Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).	LTS
NOISE-2: Existing noise environments at outdoor activity areas of residences along Claus Road are greater than 65 dBA L_{dn}, and would increase by more than 1.5 dBA as a result of transportation noise following implementation of the Specific Plan.	S	NOISE-2: Noise reduction methods shall be implemented to reduce generated by activities resulting from the Specific Plan. These measures shall include, but are not limited to the following: ♦ Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors.	SU

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		♦ New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. ♦ Sound insulation treatments to affected buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces. ♦ Installing traffic calming measures to slow traffic along Claus Road could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.	
NOISE-3: While the duration and phasing of construction activities for the Specific Plan is unknown at this time, it is conceivable that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA for durations exceeding one construction season.	S	NOISE-3: To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the plan area: ♦ Limit construction to the hours of 7:00 a.m. to 6:30 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays. ♦ Equip all internal combustion engine-driven equipment with mufflers which are in good condition and appropriate for the equipment. ♦ Unnecessary idling of internal combustion engines should be strictly prohibited. ♦ Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA. ♦ Utilize "quiet" air compressors and other stationary noise sources where technology exists. ♦ Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in	LTS

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		residential areas where feasible. ♦ Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site. ♦ The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. ♦ Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.	
NOISE-4: Traffic volume increases in the vicinity of the Specific Plan vicinity will result with the development of the plan area and other planned developments in the southeast portion of the City of Riverbank.	S	NOISE-4: Implement Mitigation Measure NOISE-2.	SU
Population and Housing			
Since there are no significant impacts related to cultural resources as a result of the Plan, no mitigation measures are required.			
Public Services			
PUB-1: In order to improve response times and ISO ratings, a new fire station is required either in the Bruinville planning area or in the RAAP Plan Area. The addition of a new Fire Station on the east side of the City near the RAAP would be necessary as the proposed Plan builds out. The new station	S	PUB-1: The additional personnel, station, and apparatus shall be incorporated into the RAAP Specific Plan and have benchmarks for when the staffing and facilities are added.	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
would need at least nine personnel hired for staffing purposes (3 per shift), and the station would need a new Type 1 Engine, Type 3 Engine, and a Water Tender for apparatus. This would be a *significant* impact.			
Recreation			
Since there are no significant impacts related to parks and recreational facilities as a result of the Plan, no mitigation measures are required.			
Transportation and Traffic			
TRANS-1: The Claribel Road/Coffee Road intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.	S	TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stanislaus County plans to signalize this intersection as part of the Claribel Road widening project. Funding for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.	LTS
TRANS-2: The Claribel Road/Roselle Avenue intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.	S	TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-3: Future development within the RAAP area would add truck traffic to intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/ Patterson Road. As these intersections do not currently accommodate the turning movements of large trucks, this is considered a potentially significant impact based on the significance criteria.	S	TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements at the intersections identified above, though the payment of local and regional traffic fees, that improve turning radii for large trucks. No improvements have been identified for these intersections.	SU
TRANS-4: Future Development in the RAAP Specific Plan area could substantially increase hazards due to a design feature or incompatible uses.	S	TRANS-4: Although construction impacts are expected to be temporary and less-than-significant, for all future development in the plan area, the following is recommended to minimize the effects of construction related activity: ♦ Prepare a construction management plan, including: • Project staging plan to maximize on-site storage of materials and equipment. • A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes. • Permitted construction hours. • Location of construction staging. • Provision of on-site parking for all construction employees, site visitors, and inspectors. • Provisions for street sweeping to remove construction related debris on public streets.	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-5: The Claribel Road/Coffee Road intersection is projected to operate at LOS F during the AM and LOS E during the PM peak hours. The addition of project traffic would worsen deficient operations in both peak hours. This is considered significant based on the significance criteria, as LOS C is the standard for this intersection.	S	TRANS-5: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS C would be achieved. Alternatively, intersection improvements beyond the cross-section identified in the General Plan could be provided to improve peak hour operations, such as dual left-turn lanes and right-turn only lanes on all approaches. This improvement would improve the service level to LOS E during the AM peak hour and LOS D during the PM peak hour, as shown on Table 4.16-10. These service levels are considered deficient for this intersection. Given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	SU
TRANS-6: The Claribel Road/Oakdale Road intersection is projected to operate at LOS F during the AM and PM peak hours. The addition of project traffic would worsen LOS F operations. This is considered significant based on the significance criteria, as LOS D is the standard for this intersection.	S	TRANS-6: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS D would be achieved. Alternatively, construction of additional improvements at this intersection that would result in acceptable service levels, including dual left-turn pockets on the northbound, westbound, and eastbound approaches could be constructed. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown in Table 10 of the TIA, reducing this impact to a less-than-significant level. However, given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	SU
Utilities and Service Systems			
UTIL-1: Buildout of the Plan would require improvements to existing stormwater facilities. The existing stormwater pipes have areas where there are	S	UTIL-1: The Stormwater Master Plan for the proposed Plan recommends the following measures: ♦ Manholes should be repaired to ensure the lids seal properly to prevent inflow	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
improperly functioning gravity systems, cracked or offset joins, or vertical and/or horizontal pipe cracks. Other deficiencies in the existing storm-water system include the squirrel hole in the reservoir and the undersized main line piping. With the existing deficiencies, the proposed Plan would have the potential to increase flooding. This would be a *significant* impact.		and infiltration of storm water during rain events. ♦ In order to mitigate the possible contamination of polychlorinated biphenyls (PCBs) within the storm drain, one of the following options could be implemented: • Clean and apply a lining or coating to all affected storm drain pipes; • Replace affected storm drain pipes with larger pipes; • A combination of lining a portion of the storm drain pipes and replacing other storm drain pipes: this involves adding a second pipe between the north reservoir lift station and the diversion structure located near Gate 10. Also includes replacing storm drain piping, with larger pipe size, from the diversion structure to the Building Group. ♦ Current County Standards require new systems to have a capacity to convey storm events equal to the 10-year return period or larger. Lining the interior of affected piping is a cost effective way to mitigate potential contamination of pipes while providing approximately the same (slightly improved) level of service in relation to stormwater conveyance. ♦ If there are opportunities to upgrade the lift station pumping capacity in the future, the LRA should use that opportunity to significantly increase lift station capacity. Increasing size (i.e. conveyance capacity) of storm drain piping upstream from the north lift station will not be effective unless the lift station capacity is increased. ♦ Improvements to the existing north reservoir should be completed at the LRA's earliest opportunity. The squirrel hole(s) in the reservoir bank should be repaired and the lower outlet valve returned to the normal operating position (i.e. closed). This would allow more storage capacity of the reservoir prior to discharge, which would allow more time for suspended soils to settle out in stormwater traveling through the reservoir during rainfall events. Currently, the exterior bank slope is approximately 2:1 (horizontal to verti-	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		cal). The slopes may be reduced as much possible within the constraints of space allotted to the reservoir (i.e. approximately 3:1) to reduce the possibility of the rodent holes extending through the bank. Additionally, the repaired slopes may be hardened with rock or crushed brick to make it more difficult for rodents to penetrate the surface. ♦ To determine the performance of the reservoir outlets, a detailed hydraulic analysis of the OID piping would need to be accomplished. The 10-year and 50-year storm events produce approximately 4.0 MGAL and 4.2 MGAL, respectively. Therefore, the combined outlet piping would need to discharge approximately 1.0 to 1.2 MGAL to prevent the reservoir from becoming full and having water overtopping the banks during these types of storm events. In order to discharge 1.2 MGAL, the outlet piping would need to discharge at an average rate of 3.2 cubic feet per second (cfs) over a 24-hour period. This is a relatively small flow rate and most likely the discharge piping connected to the OID piping and overflow piping would prevent the reservoir from reaching maximum capacity during these types of storms events (i.e. approximately 3.2 cfs is the minimum required and unrestricted gravity flow to OID piping would be approximately 10 cfs, if the OID piping was empty and able to accept full gravity flow). ♦ If the properties around the reservoir are developed, additional analysis to determine the OID piping hydraulic capacity should be conducted and, if needed, the north reservoir should be increased in size to prevent potential flooding of the newly developed sites. By removing the earthen divider and extending the basin to the northeast by approximately 120 feet, the reservoir capacity could be increased to approximately 4.5 MGAL. This would provide the additional capacity necessary to ensure the basin can adequately store stormwater runoff from larger events even if the OID has little or no capacity to receive water from the reservoir outlets. ♦ Based on the results of percolation testing, the soils within the site appear to	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		have adequate capacity to infiltrate stormwater directed into basins, swales, or rain gardens. Final design for these areas of the site should include additional percolation testing in order to estimate infiltration rates at the locations and depths of final design basins and other LID components proposed within these areas. ♦ Future development should include LID features to the maximum extent practical, and at a minimum LID components (in additional to large infiltration basins) should cover 15 percent of the total site area. This minimum percentage is based on the example site layout conducted as part of this study that incorporates LID features into a practical commercial site layout. The LID components may include, but not be limited to the following: • Shallow infiltration basins • Bioretention basin / rain gardens • Porous concrete within parking stalls • Rainwater harvesting system (cisterns and/or rain barrels) ♦ In addition to structural LID components, sites should be designed to minimize continuous impervious surfaces where possible. This includes providing landscaping around buildings and breaks between roadways and sidewalks. This also includes generally reducing the amount of impervious surfaces around sites.	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

3 PROJECT DESCRIPTION

The Specific Plan is a planning and regulatory tool available to local governments in the State of California. As allowed under California State law (Government Code 65450 et seq.), the City of Riverbank would use the Draft Riverbank Army Ammunition Plan (RAAP) Specific Plan, in part, to implement its adopted General Plan. The Specific Plan, which must be consistent with the City's General Plan, is intended to provide a greater level of specificity in planning on the RAAP site.

This draft programmatic Environmental Impact Report (EIR) analyzes the potential impacts of adopting and implementing the Draft RAAP Specific Plan (Specific Plan), which covers an approximately 146-acre area in the southeast portion of Riverbank. As a programmatic EIR, this document will help streamline the environmental review required for future development projects within the Specific Plan Area. Specifically, environmental review for future projects will be permitted to "tier" from this EIR if certain criteria are met, as provided by State law (Public Resources Code 21094).

The project also includes adoption of amendments to the Riverbank General Plan and Zoning Ordinance, changing the current land use designations in the Plan Area and establishing new development standards to replace current zoning provisions applicable to the Plan Area. These amendments must be completed to ensure consistency between the Specific Plan, General Plan, and Zoning Ordinance. This EIR will be used by decision-makers in making their determination of whether or not to adopt the Specific Plan, as well as by the public to clearly understand the environmental implications associated with adoption and implementation of the Specific Plan.

This chapter describes the proposed project. It discusses the overall location and character of the Specific Plan Area, the land use changes proposed in the Specific Plan, potential new roadways and other infrastructure, and the regulatory actions that must follow adoption of the Specific Plan. For greater detail and clarification, please refer to the Specific Plan.

The applicant for the proposed project is the Riverbank Local Redevelopment Authority (LRA).

A. Plan Area

This section describes the regional and local setting of the Specific Plan Area, as well as the characteristics of the Specific Plan Area itself.

1. Regional and Local Location

The City of Riverbank is located in the heart of California's Central Valley in Stanislaus County. The City is located 5 miles northeast of the City of Modesto, 90 miles east of Oakland and 70 miles southeast of Sacramento. Figure 3-1 shows Riverbank's location within the region, and Figure 3-2 shows the RAAP site in the most southeastern portion of Riverbank's city limits.

2. Specific Plan Area

The RAAP site is located at the corner of Claus Road and Claribel Road, as shown in Figure 3-3, and was formerly owned and operated under control of the United States Army. From 1952 to 2009, the U.S. Army used the site to manufacture shell casings, mortar grenades and other ammunition components. However, the RAAP site was selected for closure as part of the Base Closure and Realignment (BRAC) 2005 round, and the Army decided to move Riverbank's munitions production facilities to Illinois. The site is approximately 146 acres in area. The northern and southern areas of the site remain undeveloped, and the central portion of the site contains the RAAP's existing buildings and infrastructure.

3. Plan Area Characteristics

The developed portion of the RAAP site contains approximately 150 existing structures, most of which are industrial in character. These structures are generally single-story, utilitarian buildings designed to house manufacturing activities. Areas between buildings are generally paved and used for parking, storage, or circulation. The undeveloped areas to the north and south of the

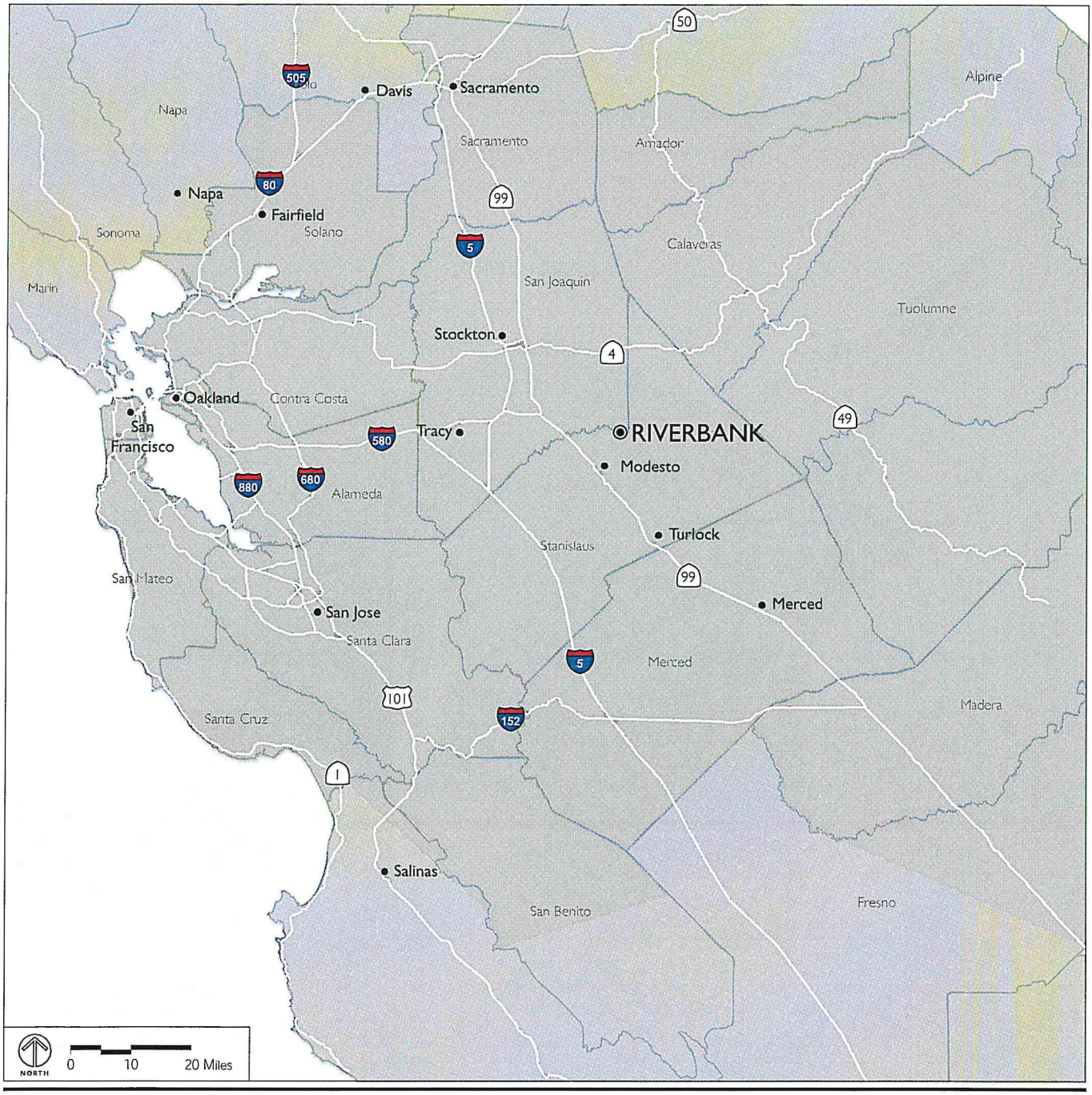


FIGURE 3-1

REGIONAL LOCATION

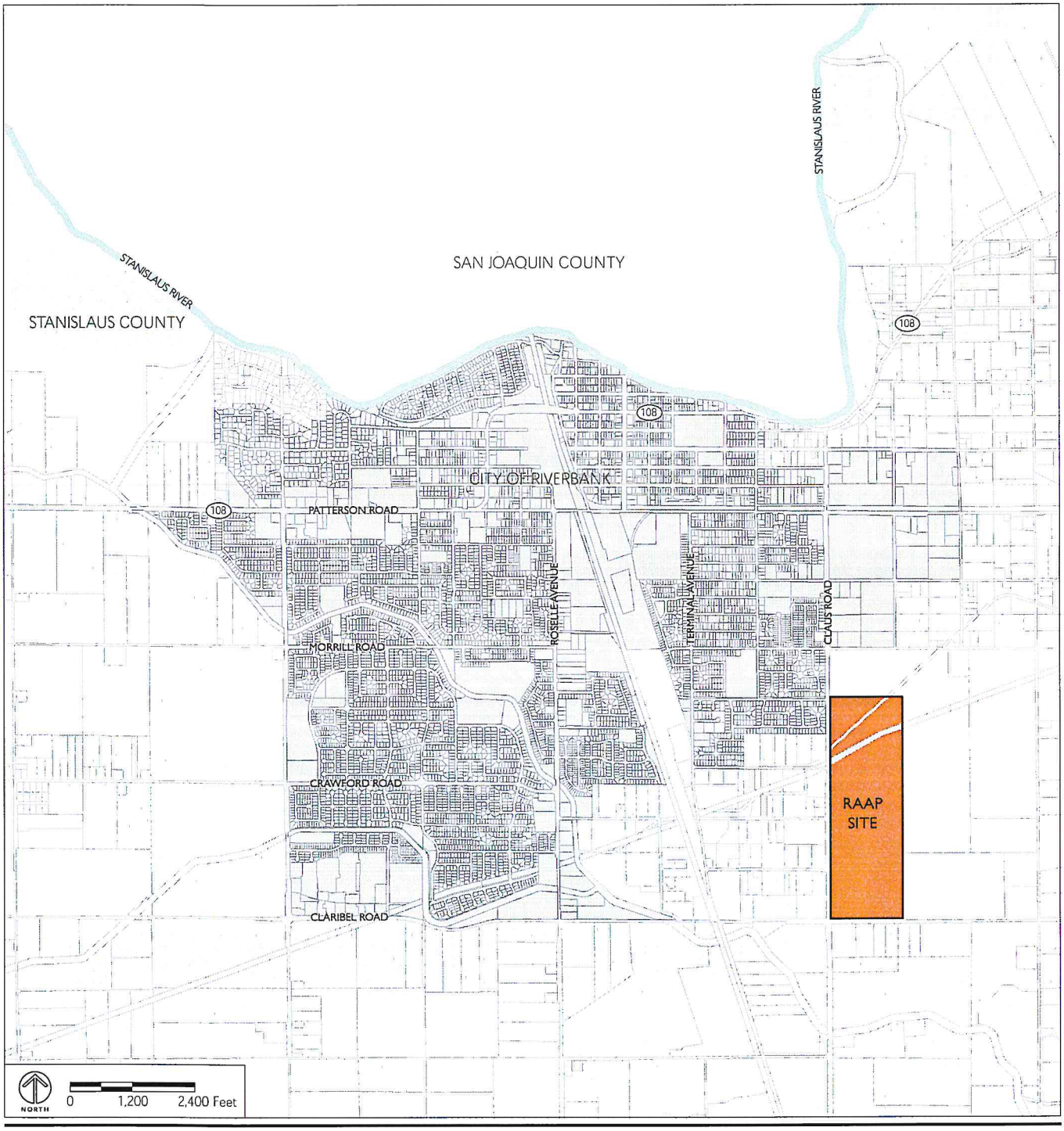


FIGURE 3-2

LOCAL LOCATION

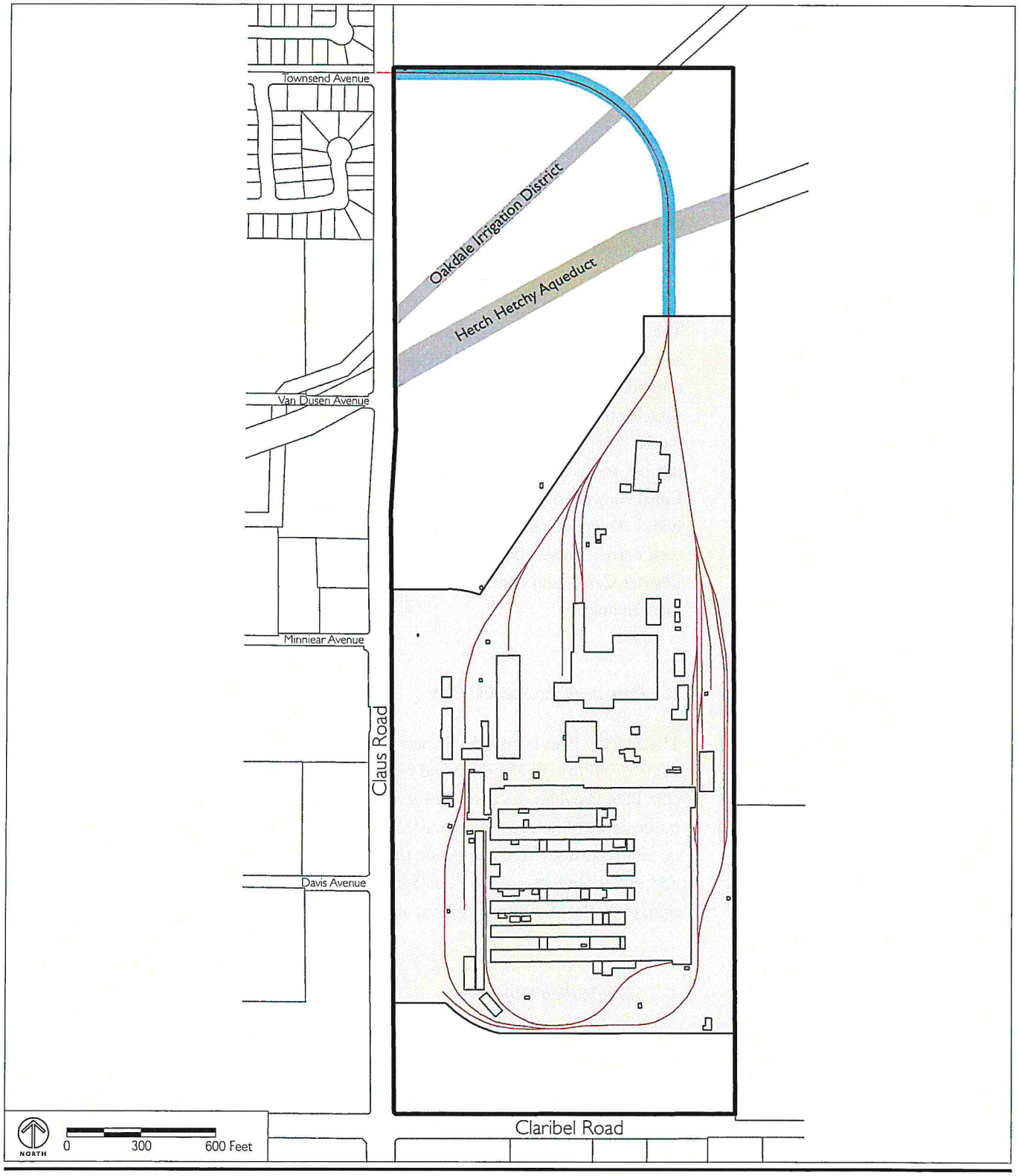


FIGURE 3-3

SPECIFIC PLAN AREA

existing RAAP site facilities are generally grasslands. Portions of the northern area serve as grazing land.

4. Surrounding Uses

The existing industrial area on the RAAP site is bordered on the north, east, and south by pasture land and rural residential uses. Low-density residential uses are located across Claus Road on the northern half of the site. A small vehicle storage lot is located across Claus Road between Minniear and Van Dusen Avenues. The Hetch Hetchy Aqueduct runs roughly east-west across the site and is approximately 100 feet wide. The Oakdale Irrigation District Canal runs northeast-southwest through the site and is approximately 60 feet wide. An active rail line with a 50-foot easement enters the site at the northwest corner, crosses both the Hetch Hetchy Aqueduct and Oakdale Irrigation District Canal, and continues into the site where it serves many of the existing buildings.

B. Purpose of the Specific Plan

The Specific Plan is intended to serve as the primary document and reference guide for future development and redevelopment at the RAAP site. The Specific Plan provides the community and decision-makers with clear documentation of the vision for the RAAP site. Furthermore, it provides a clear policy and regulatory framework for the review of future development projects and public improvements. The Specific Plan also provides guidance on design, potential public investments, and implementation.

C. Specific Plan Objectives

The City of Riverbank and its LRA conducted a community-driven planning process to develop a clear vision for the Specific Plan Area. This process involved members of the community, tenants at the RAAP site, and other stakeholders. It resulted in a Base Reuse Plan for the RAAP site that was approved by the LRA on October 30, 2008. The Environmental Assessment

for BRAC 05 Disposal and Reuse of the RAAP site was prepared in accordance with the National Environmental Policy Act (NEPA) and approved in March 2009. Based on feedback received during the Base Reuse Plan process, the Draft Specific Plan was developed to accomplish the following objectives:

- Define the vision for the future of the Specific Plan Area.
- Create goals and policies intended to facilitate achievement of the vision.
- Designate land for uses that implement the vision.
- Create development standards for the form and physical design of new development within the Specific Plan Area.
- Provide recommendations for circulation and infrastructure improvements required to support future buildout of the Specific Plan Area.
- Provide an implementation strategy for achieving the goals in the Specific Plan and putting the policies in the Specific Plan into action.

D. Draft RAAP Specific Plan

This section summarizes the key components and recommendations of the Specific Plan.

The Specific Plan would permit a mix of industrial, office/research and development (R&D), and retail uses within the Specific Plan Area. Table 3-1 shows development estimates for future buildout of the RAAP site. Overall, the redevelopment project is expected to create between 825 and 1,650 permanent jobs on-site in the next ten to fifteen years, both by attracting tenants to existing buildings and through development of the undeveloped portions of the site.

It is assumed that development would occur over the course of a 20-year period, which is considered the Plan Horizon. The rate and timeframe for

TABLE 3-1 **SPECIFIC PLAN DEVELOPMENT ESTIMATES**

	Existing (2010) (Square Feet)	Specific Plan Buildout (2030) (Square Feet)	Difference (Square Feet)
Commercial/Retail	0	119,058	119,058
Industrial	673,625	1,411,542	737,917
Office/R&D	0	116,637	116,637

development within the Plan Area are subject to variation based on market demands, the regional economy, and other socioeconomic factors.

1. Land Use and Urban Form Concepts

This section describes the land uses envisioned for the Plan Area, and the approach to implementation. Figure 3-4 illustrates the land use concept for the RAAP site.

- **Existing Industrial Areas.** The Specific Plan recommends that existing industrial areas should generally be retained as they are now. The Specific Plan does allow for additional buildings, and removal of and modifications to existing buildings in this area, with policies in place to maintain the historic character and preserve the viability of this area for future industrial uses. Additional landscaping is also recommended for this area in the Specific Plan, both for improved aesthetics and to implement principles of low-impact development (LID). It is anticipated that new development in this area would be of a similar character to existing development and not exceed 70 feet in height.
- **North End Cap.** The Specific Plan recommends a mix of R&D and industrial uses in this area, which would be planned for collectively as an R&D/industrial park. Recommended uses range from industrial uses to higher-end office and R&D uses. The Specific Plan recommends that more intensive industrial uses be located in the interior of the North End

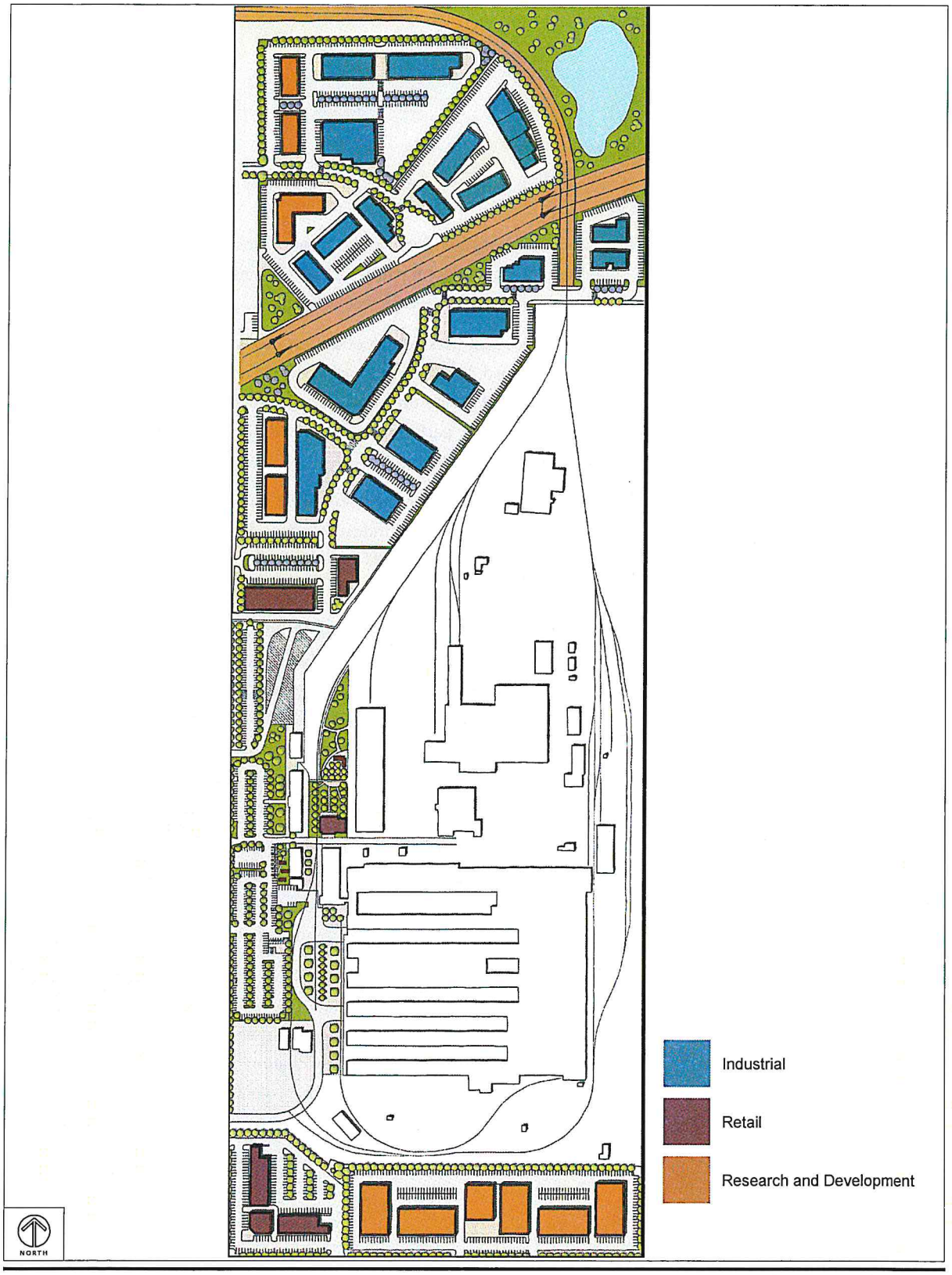


FIGURE 3-4

LAND USE CONCEPT

Cap and that less intensive uses be located closer to Claus Road, in consideration of the adjacent rural residential land uses. R&D/Industrial buildings would not exceed 55 feet in height.

- **Retail**. New retail uses are proposed on the west side of the RAAP site along Claus Road, between the Van Dusen Avenue and Minniear Avenue intersections, and at the prominent corner of Claribel and Claus Roads. Retail with surface parking is envisioned for this area with building heights not exceeding 55 feet.
- **South End Cap**. Most of the southern undeveloped area on Claribel Road is proposed for R&D/industrial uses. Higher-end R&D and office development is proposed at this location with building height not exceeding 55 feet.
- **Open Space: Northeast Detention Pond.** A large stormwater pond could be accommodated on the northeastern corner of the RAAP site, to serve as the primary stormwater management mechanism for the project. While the Specific Plan calls for the LRA to investigate this concept further, it does not commit the City to its construction.
- **Open Space: Public Open Spaces.** While the exact location of publicly accessible open space is not known at this time, it is recommended in the North End Cap area, near Claus Road. This space would provide a new resource for the community and improve the aesthetic character of the North End Cap. Programming could include passive recreational space, a dog park, small play fields, or other similar uses.
- **Private Open Spaces.** The Specific Plan encourages employers to provide open space for employees where feasible. In addition to providing break areas for employees, these areas could enhance the aesthetic character of the RAAP site as a whole. The location, size, and character of these spaces would be decided on a project-by-project basis.

2. Circulation Concepts

This section describes recommended circulation improvements within the Plan Area. The exact configuration of future transportation infrastructure and roadways may vary.

- **Exterior Roadway Concepts.** It is recommended that the western and southern project frontages, along Claribel and Claus Roads, be widened to their ultimate widths and the appropriate turn-pockets, bicycle facilities, and pedestrian amenities provided. It is recommended that four 12-foot lanes be provided for primary vehicular circulation with a two-way turn lane or possible median separating travel directions. This lane configuration will support heavier truck movement. The streetscape should include a 20-foot planter strip at the outside edge that provides a landscape buffer and a 10-foot minimum wide sidewalk/bike path. Trees should be planted within the buffer to provide shade, shield pedestrians from traffic, and enhance the aesthetic character of the RAAP site. Northbound right-turn lanes into the site from Claus Road should be constructed where heavy truck movements are expected to facilitate their movements into the site. Given the length of the site, over ½ mile, several potential transit stops should be included along the project frontage on both Claus and Claribel Roads.

- **North End Cap Roadway Plan.** As shown in Figure 3-5, a loop road is proposed that would serve new industrial development in the Northern Industrial Park. As shown in the cross-section in Figure 3-6, it is proposed that this roadway provide two 18-foot lanes, one in each direction. These wide lanes would allow for occasional truck queuing on the roadway without impeding through traffic. Additionally, these wider lanes would allow ample room for bicyclists and vehicles to travel along the roads simultaneously.

- **Pedestrian Circulation.** Sidewalks are recommended on the western and southern edges of the RAAP site to provide for safe pedestrian circulation. Furthermore, sidewalks are recommended within the street right-of-way on interior roads in the North End Cap. Sidewalks will be buffered from vehicular circulation through planting strips and street trees.

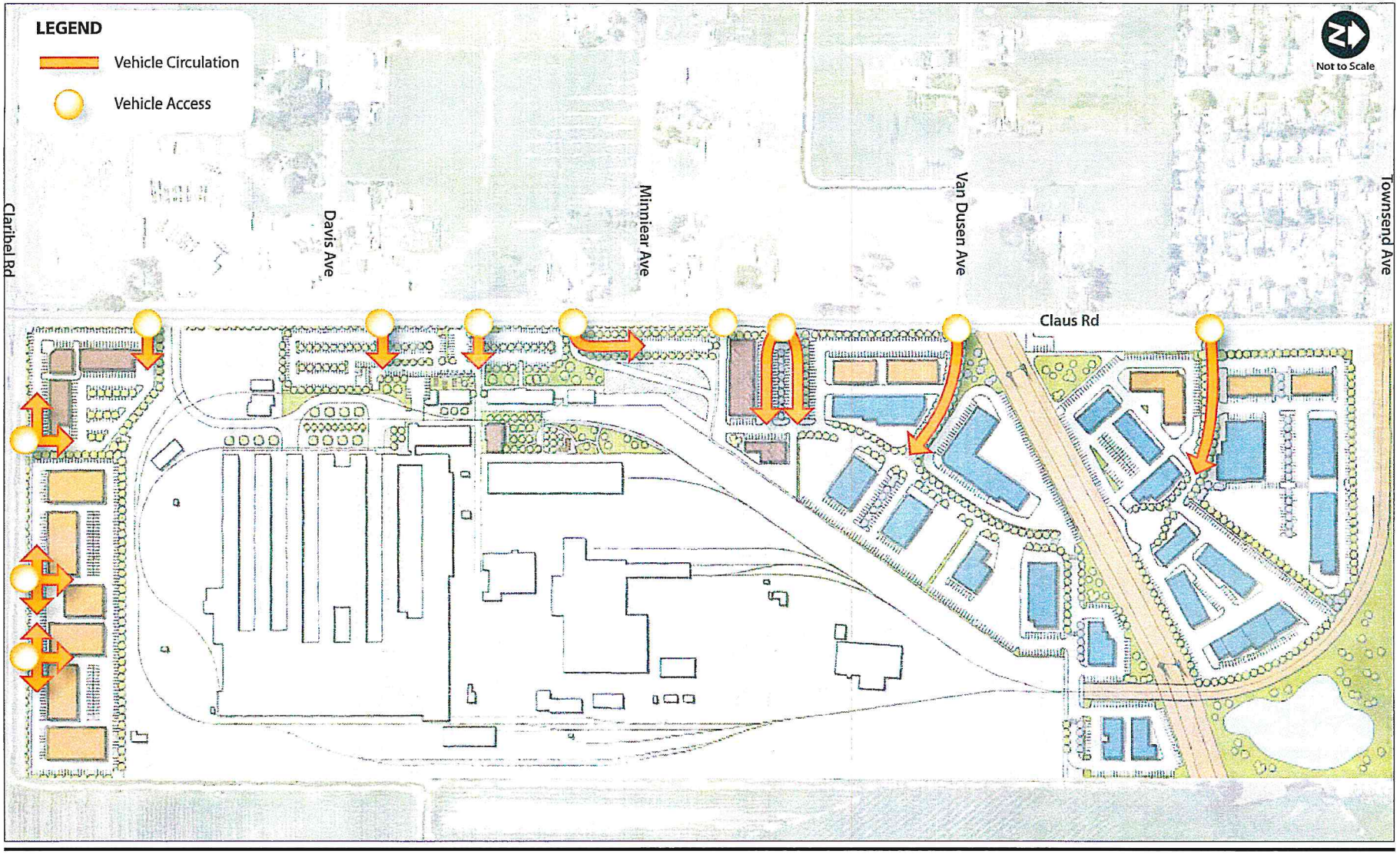


FIGURE 3-5
ROADWAY PLAN

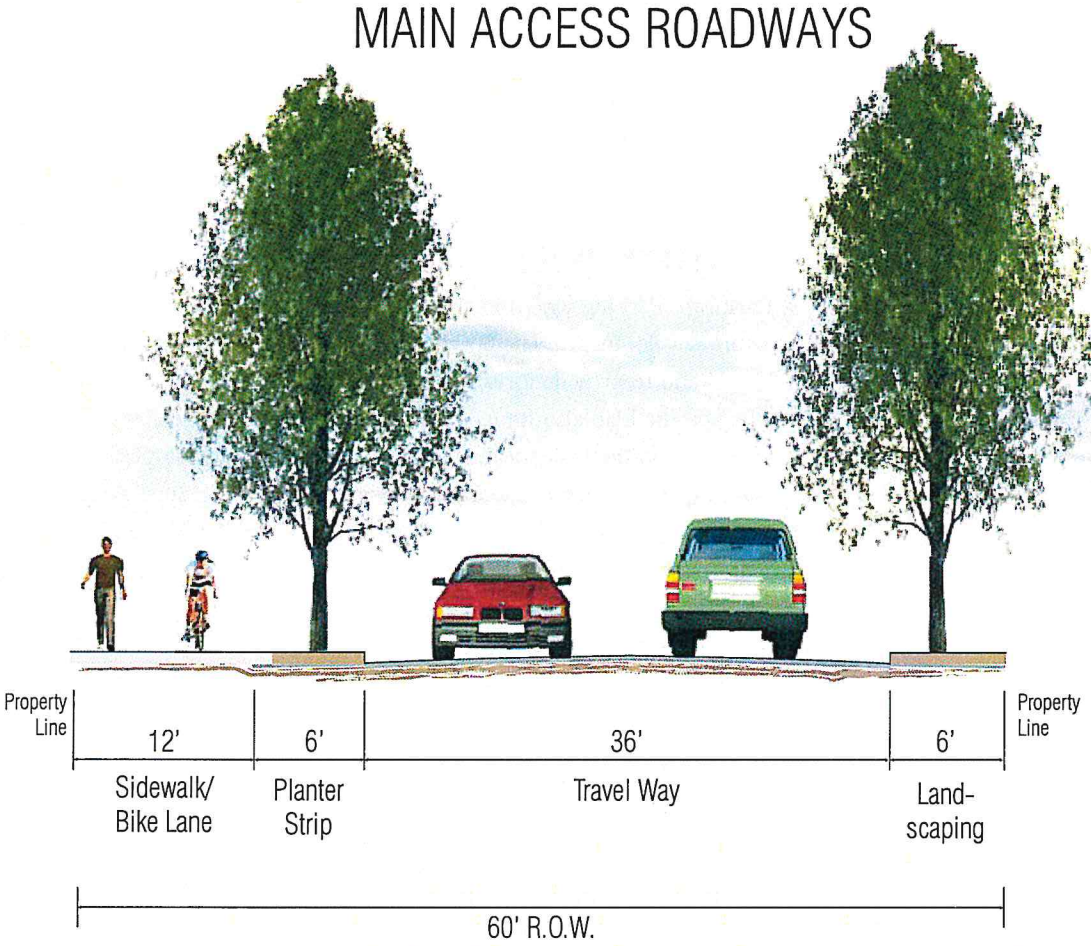


FIGURE 3-6

TYPICAL STREET CROSS-SECTION

- **Bicycle Circulation.** Roadway design should accommodate bicycles by providing wide lanes that accommodate bicycles and permit vehicular traffic to safely pass bicyclists. Public bicycle parking should be provided as part of private development and any public open space or amenity.
- **Parking.** Parking would likely be provided in surface parking lots for all future development. The Specific Plan requires parking areas to be landscaped and to provide for safe pedestrian access and vehicular circulation. The Specific Plan also limits parking between buildings and streets to improve the aesthetic character of streets and create a more pleasant pedestrian experience for workers and visitors to the RAAP site. As such, the Specific Plan calls for larger parking areas to be provided behind buildings within the interior of sites.

3. Infrastructure Concepts

This section discusses infrastructure improvements proposed for the Specific Plan Area.

- **Hetch Hetchy Aqueduct.** The Specific Plan does not propose any changes to the Hetch Hetchy Aqueduct, which is under the jurisdiction of the San Francisco Public Utilities Commission (SFPUC). New development will avoid the 100-foot-wide parcel that is reserved for this infrastructure feature.
- **Relocated Oakdale Irrigation District Canal.** The Specific Plan calls for the City to work with the Oakdale Irrigation District (OID) to explore relocating the Oakdale Irrigation Canal, an underground irrigation canal traversing the site, to create more viable development parcels. There are several possible options for relocating the Canal in the northwestern portion of the RAAP site before connecting to its current alignment west of Claus Road as shown in Figure 3-7. While the Specific Plan does not commit the City to implementation of this concept, it does set aside land where the Canal could be relocated in the future.

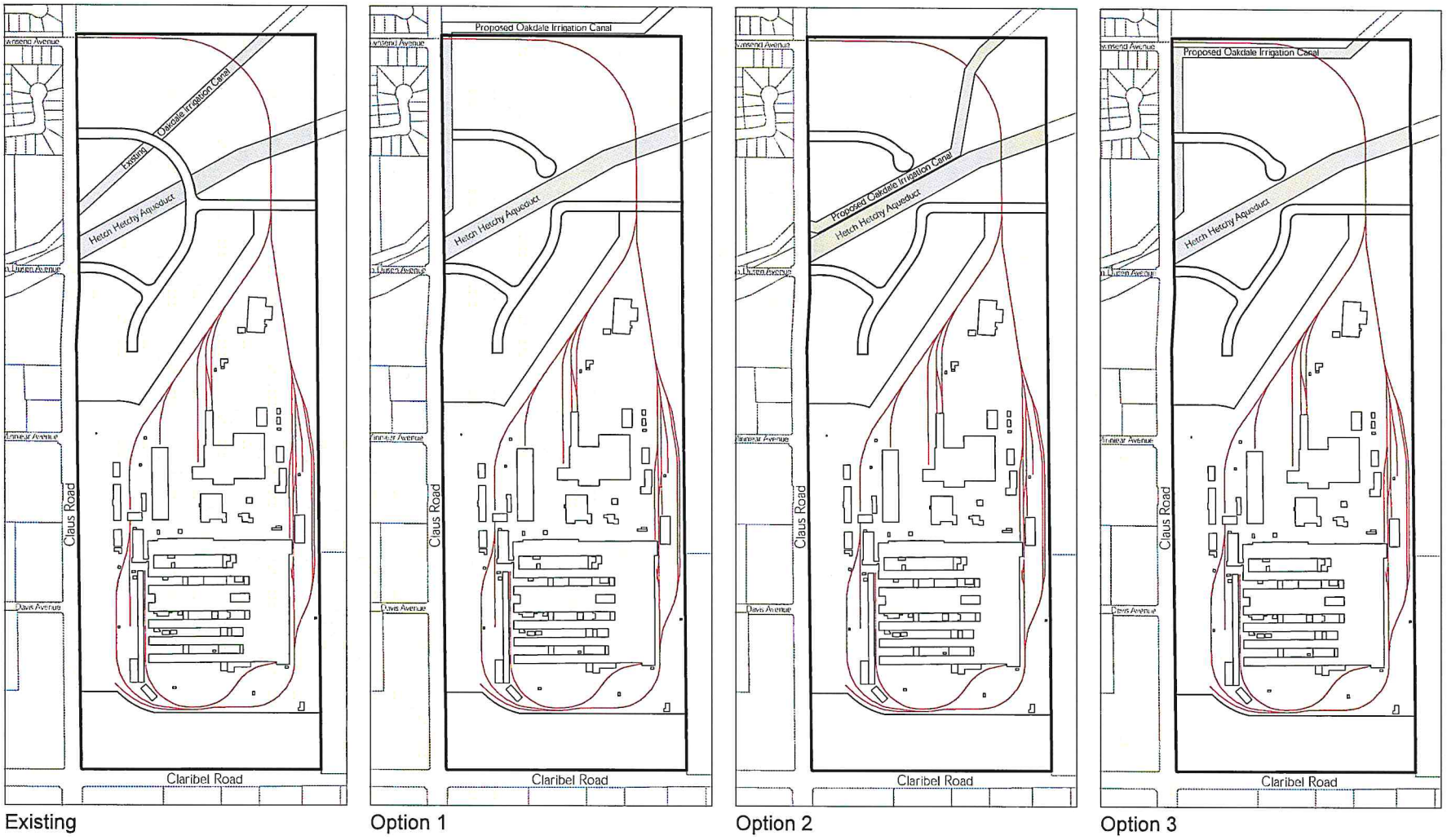


FIGURE 3-7

POTENTIAL OID REALIGNMENT

- **Stormwater Pond.** The Specific Plan proposes a number of stormwater management strategies, which could be employed on a project-by-project basis. As discussed above, the City will explore creation of a new stormwater pond at the northeast corner of the RAAP site, which would collect much of the on-site runoff. At present, the Specific Plan proposes expanding the existing on-site stormwater pond, which collects runoff from the existing industrial areas, to accommodate future development.
- **On-Site Stormwater Management Concepts.** The Specific Plan proposes several on-site stormwater management strategies that could be employed on a project-by-project basis, depending on project-specific issues and conditions. The Specific Plan recommends several LID techniques, including rain catchments, cisterns, rain gardens, and permeable paving.
- **Rail Infrastructure.** The Specific Plan proposes to retain the existing rail line that connects the Burlington Northern Sante Fe (BNSF) rail line to the privately operated rail line on the RAAP site. If feasible, the rail line could be improved or expanded to create additional spurs that connect to buildings. It could also potentially be expanded to create a "team track" that allows for the loading and unloading of shipments between trucks and rail cars. While the Specific Plan does not call for any of these improvements, it acknowledges that they may be desired in the future.

4. Specific Plan Goals, Policies and Standards

The following goals, policies, and standards are set forth in the Specific Plan to implement the concepts and recommendations discussed above.

- **Goals and Policies.** The Specific Plan outlines a clear set of goals and policies addressing future development in the Plan Area. Goals are statements that represent a specific condition or end state that would fulfill the vision and concepts outlined in the Specific Plan. Each goal is accompanied by a set of policies that help guide decision-making as statements of City regulation. Goal and policy topics include economic development, land use and community design, transportation and circulation, and public facilities and services. Future development proposals and public im-

provements in the Specific Plan Area would be evaluated for consistency with the Plan's goals and policies.

- **Land Use Designations.** The proposed land use designations, shown in Figure 3-8, specify a range of typical allowed land uses.
- **Land Use Regulations and Development Standards.** To implement the design goals for the Specific Plan Area, the Specific Plan contains tailored development standards that regulate the permitted uses and conditional uses and provide parameters for the physical character of buildings, site design, landscaping, and other components of site planning and architectural design.
- **Design Standards and Guidelines.** The Specific Plan also provides a set of required design standards, as well as flexible design guidelines for public improvements and private development. The design standards and guidelines provide a range of design recommendations, including guidance on public rights-of-way, site planning, building materials and design, landscaping, signage and other features.

E. General Plan Amendments

The proposed project includes amendments to the Riverbank General Plan, to ensure consistency between the Specific Plan and the existing General Plan, as required by State law. For the purposes of analysis in this EIR, it is assumed that the General Plan Amendments only apply to the Specific Plan Area. The proposed General Plan land use designations for the Specific Plan Area are shown in Figure 3-8.

In addition, a revision to General Plan Figure DESIGN.36 is required to add the Claus/Claribel intersection as an additional gateway.



FIGURE 3-8

PROPOSED GP LU DESIGNATIONS

F. Zoning Amendments

This section describes amendments to the Zoning Ordinance necessary to implement the vision outlined in the Specific Plan.

The Specific Plan contains a chapter identifying development standards for new projects within the Plan Area. The development standards will modify the allowable uses and development standards in the existing Zoning Ordinance. The proposed project includes a zoning overlay district that will be added to the existing Zoning Ordinance. The zoning overlay district boundaries will be consistent with the Specific Plan Area. For those provisions not modified by the Specific Plan, the similar zoning classifications in the City's existing Zoning Ordinance will apply. Should conflicts exist between the Specific Plan and Zoning Ordinance, the provisions in the Specific Plan will apply.

G. Agency Consultation Requirements

California Senate Bill 18 (2004) mandates that Cities contact and consult with California Native American tribes in preparation of Specific Plans. Tribal consultation has been undertaken for the Specific Plan.

The City and its LRA will pursue delisting the RAAP site as a Superfund site by working with the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency (Cal/EPA), and the California Department of Toxic Substances Control (DTSC).

H. Required Permits and Approvals

The proposed project will require the following permitting and approval actions:

- Certification of the EIR by the Riverbank City Council.

- Adoption of the RAAP Specific Plan by the Riverbank City Council.
- Adoption of a series of General Plan amendments by the City Council to ensure required consistency between the Riverbank General Plan and the Specific Plan.
- Adoption of the Specific Plan's Development Standards by the City Council as a zoning overlay district for the Plan Area.

4 ENVIRONMENTAL EVALUATION

This chapter evaluates the direct, indirect, and cumulative environmental impacts of the Plan by examining the following environmental issue areas:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Mineral Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

A. Chapter Organization

This chapter consists of 17 sections that evaluate the environmental impacts of the proposed Project. Each issue area uses the same format and consists of the following subsections:

- The *Regulatory Setting* section describes which local, State and/or federal regulations are applicable to the Plan.
- The *Existing Conditions* section describes current conditions with regard to the environmental factor reviewed.
- The *Standards of Significance* section describes how an impact is judged to be significant in this EIR. These standards are derived from CEQA Appendix G Guidelines unless stated otherwise.

- The *Impact Analysis* assesses potential impacts (direct and indirect), and tells why impacts were found to be significant or less than significant. The impact determination is summarized at the end of the checklist heading, and impact statement, as *SU (Significant and Unavoidable), LTS with Mitigation (Less than Significant with Mitigation), LTS (Less than Significant),* and *NI (No Impact).*
- The *Cumulative Impacts* section analyzes impacts that the Plan may have when considered in addition to other past, present, and reasonably foreseeable projects. (See further discussion below.)
- The *Impacts and Mitigation Measures* section numbers and lists identified impacts, and presents measures that would mitigate each impact. In each case, the significance following mitigation is also explained.

B. Cumulative Impact Analysis

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR, together with other reasonably foreseeable projects causing related impacts. Section 15130 of the CEQA Guidelines requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable."

Where the incremental effect of a project is not "cumulatively considerable," a Lead Agency need not consider that effect significant, but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. Where the cumulative impact caused by the project's incremental effect and the effects of other projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

The CEQA Guidelines provide two approaches to analyzing cumulative impacts. The first is the "list approach," which requires a listing of past, present, and reasonably anticipated future projects producing related or cumulative impacts. The second is the projections-based approach, which summarizes the relevant growth projections contained in an adopted General Plan or re-

lated planning document that is designed to evaluate regional or area-wide conditions. A reasonable combination of the two approaches may also be used.

The cumulative impact analysis in this Draft EIR uses a projections-based approach. For some environmental topics (such as traffic, air quality, greenhouse gas emissions), a greater geographic extent is used for the cumulative analysis and foreseeable development projects outside of the City of Riverbank are taken into consideration.

4.1 AESTHETICS

This chapter discusses the existing aesthetic character of the Plan Area and evaluates the potential impacts to aesthetics associated with the RAAP Specific Plan. The following evaluation assesses visual character, scenic vistas, scenic highways, and light, and glare.

A. Regulatory Framework

This section summarizes key State and city regulations and programs related to aesthetics at the RAAP site. There are no federal regulations pertaining to aesthetics that apply to this project.

1. California Scenic Highway Program

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects scenic State highway corridors from changes which would diminish the aesthetic value of lands adjacent to the highways. According to the California Scenic Highway Program, there are no State-designated scenic highways within the Planning Area.[1]

2. City of Riverbank General Plan

The Riverbank General Plan includes several goals and policies that relate to aesthetics. Table 4.1-1 lists these goals and policies.

3. Riverbank Municipal Code

In addition to the existing General Plan, the City of Riverbank's Municipal Code regulates the form and character of development in the city through the Land Use Code, the Building and Construction Code, and the Grading Ordinance.

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[1] California Department of Transportation website, Officially Designated State Scenic Highways, http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm, accessed March 10, 2010.

TABLE 4.1-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AESTHETICS**

Goal/Policy Number	Goal/Policy Content
Goal DESIGN-2	**Amenities and features along neighborhood residential and commercial streets that accommodate all travel modes**
Policy DESIGN- 2.5	The City will require visually attractive streetscapes with street trees and sidewalks on both sides of streets, planting strips, attractive transit shelters, benches, and pedestrian scale streetlights in appropriate locations.
Goal DESIGN-11	**Urban design of commercial projects and neighborhood centers enhance the character of the city**
Policy DESIGN- 11.1	The City will support urban design programs that incorporate public and semi-public improvements to enhance the connections among special activity districts. Improvements may include, but should not be limited to, public spaces, parks and plazas, pedestrian walkways, and crosswalk definition.
Policy DESIGN- 11.2	The City will require the use of durable, high quality building materials to lower maintenance and replacement needs and ensure the aesthetic appeal of new development.
Goal DESIGN-13	**New industrial and bulk retail developments consider human scale**
Policy DESIGN- 13.1	Approved plans, projects, and subdivision requests shall reduce the overall perceived size and scale of large projects through such means as sensitive massing, articulation, and organization of buildings; the use of color and materials; and the use of landscaped screening.
Policy DESIGN- 13.2	The City will encourage the use of public art, in particular murals and integrated designs in wall architecture, to add visual interest and to break up the monotony of unarticulated walls of large industrial buildings.
Policy DESIGN- 13.3	The City will encourage small-scale, pedestrian-oriented commercial uses that serve the industrial district's employee population with sensitivity to potential conflicts with truck and automobile transportation modes.
Policy DESIGN- 13.4	New industrial projects shall incorporate innovative site design and treatment of surface parking areas in order to avoid the appearance of a sea of asphalt and reduce storm water runoff and increase percolation.

TABLE 4.1-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AESTHETICS** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Goal DESIGN-14	**Site and building design of industrial and bulk retail projects, consider the context and potential linkages to surrounding area**
Policy DESIGN- 14.1	The City will arrange streets in industrial districts as an interconnecting network that facilitates access.
Policy DESIGN- 14.2	Where appropriate, the City will require alternative arrangement or design of buildings to respect the scale of neighboring nonindustrial buildings.
Policy DESIGN- 14.3	When new development, re-development, or maintenance of industrial and bulk retail complexes occurs, the City will require aesthetic and landscaping improvements of facades and entry features oriented to the street that will strengthen the identity of Riverbank.
Policy DESIGN- 14.4	When new development, re-development, or maintenance of industrial and bulk retail complexes occurs adjacent to environmentally-sensitive areas, the City will require landscaping improvements that will maintain or strengthen existing aesthetic qualities and environmental functions.
Goal DESIGN-16	**Riverbank protects its natural features.**
Policy DESIGN- 16.2	The City will encourage the preservation of healthy, attractive native vegetation during land development. Where this is not possible, the City will require site landscaping that uses appropriate native plant materials.
Goal DESIGN-17	**Environmental sensitivity and low-impact development principles in the design and construction of all projects.**
Policy DESIGN- 17.2	Lighting in development projects shall include low, pedestrian scaled, ornamental street lights, and shall otherwise design lighting as to prevent glare and spillover onto adjacent properties and to prevent any glare that could affect motorists or bicyclists.
Goal DESIGN-18	**Renewable resource use and energy-efficiency in site and architectural design**
Policy DESIGN-18.1	The City will promote safe and sustainable energy collection and distribution systems that draw from renewable energy sources.
Policy DESIGN-18.2	The City will encourage passive and natural lighting systems in architectural design to conserve electricity.

TABLE 4.1-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AESTHETICS** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy DESIGN-18.3	The City will encourage building-site orientation, articulated windows, roof overhangs, appropriate insulation materials and techniques, and other architectural features that allow for improved passive interior climate control.
Policy DESIGN-18.4	The City will ensure that municipal buildings are LEEDTM certified and promote LEEDTM certification of multi-family, commercial, and industrial properties.
Goal DESIGN-19	**Water quality is protected throughout the development process and occupation of the site**
Policy DESIGN-19.1	The City will establish site design criteria for allowing natural hydrological systems to function with minimum or no modification.
Policy DESIGN-19.2	The City will promote the use of rain gardens, open ditches or swales, and pervious driveways and parking areas in site design to maximize infiltration of storm water and minimize runoff into environmentally critical areas.
Policy DESIGN-19.3	The City will promote inclusion of passive rainwater collection systems in site and architectural design for non-potable water (gray-water) storage and use, thereby saving potable (drinking) water for ingestion.
Goal CONS-7	**Maintain and increase public access to Riverbank's scenic resources**
Policy CONS- 7.5	The City will coordinate with the City of Oakdale to implement policies to preserve open space for scenic and other benefits in the Scenic Highway 108 corridor (see Figure CONS-2).
Policy CONS- 7.6	Lighting shall be designed to avoid glare, prevent light spillage onto adjacent properties, avoid adverse impacts to nocturnal wildlife, and avoid light pollution that would contribute light to the nighttime sky.

a. Land Use Code

Title 15, Chapter 153 of the Riverbank Municipal Code establishes eleven classes of district which regulate the heights and bulk of buildings, as well as the area of yards and other open spaces around buildings. Development standards for the Light Industrial Zone include a requirement that proposed

buildings be subject to site plan review by the Planning Commission prior to issuance of a building permit.

b. Building and Construction Code

Title 15, Chapter 150 of the Riverbank Municipal Code regulates the building and construction requirements in the city. Several standard codes have been incorporated by reference, including the Uniform Building Code, the Uniform Housing Code, the Uniform Code for Building Conservation, the Uniform Code for Building Conservation, and the Uniform Code for Solar Energy Installations.

c. Grading Ordinance

Title 15, Chapter 155 of the Riverbank Municipal Code regulates grading and excavation activities in the city, establishing performance standards applicable on public and private lands. These regulations are designed to conserve the general visual character of grading/clearing sites and settings; enhance the aesthetic value of new development; conserve the aesthetic value of surrounding properties; and reduce propagation of noxious weeds.

B. Existing Conditions

1. Visual Character

The project site is located on Claus Road, north of Claribel Road. In total, the site occupies 146 acres. The Riverbank Army Ammunition Plant itself occupies only 98 acres of the total area. The remainder is made up of former grazing lease land and other undeveloped areas. The Oakdale Irrigation Canal and Hetch Hetchy Pipeline both run through undeveloped portions of the site. The area to the south and east of the site contains farmlands in active use. To the west of the site there are medium and low-density residential neighborhoods within the City of Riverbank.

In total, there are 191 structures on the site. The production facilities are located at the south end of the site. Buildings 1 to 6, which housed aluminum production and later shell casing production lines, are laid out from east to

west in parallel lines. The majority of the remaining buildings are clustered nearby to the north. Near the main gates on Claus Road is a grouping of administrative buildings and on-site visitor parking.

With the exception of the administrative buildings, which show greater attention to architectural detail, the buildings on the site are stark, utilitarian, and industrial, mostly constructed of corrugated steel with steel-frame construction and large, open interior spaces. While Buildings 1 to 6 are strikingly repetitive in scale and design, they do not dominate views on the ground. The property is characterized by dense construction, a variety of building heights, forms, and materials, and the myriad network of pipes, tanks, machines, rail lines, roads, and other utilities serving and connecting the structures. Views of within the RAAP site are shown in Figure 4.1-1. Support structures on the site include a series of small buildings and sheds, most of them entirely of steel construction with minimal or no windows. These support structures are notable for their utilitarian design. Their placement is almost exclusively functional, sometimes a short distance from a much larger building and sometimes isolated in an open area.

The administration building grouping is unique in its form and location. These brick gable- and hip-roof buildings are domestic in scale, at one standard story, as well as in form. Regular fenestration, originally matching typical double-hung windows, and a prominent location just inside the gate to the plant give the buildings a civilian and non-industrial character, which acts in part as a buffer between the large scale manufacturing buildings and structures of the plant and the agrarian and residential landscape outside it.

2. Scenic Vistas

The Riverbank General Plan emphasizes the importance of scenic views along the Stanislaus River and includes Policy CONS-7.1 which aims to improve public access to areas along the Stanislaus River where scenic views are available. The General Plan does not designate any other scenic vistas.

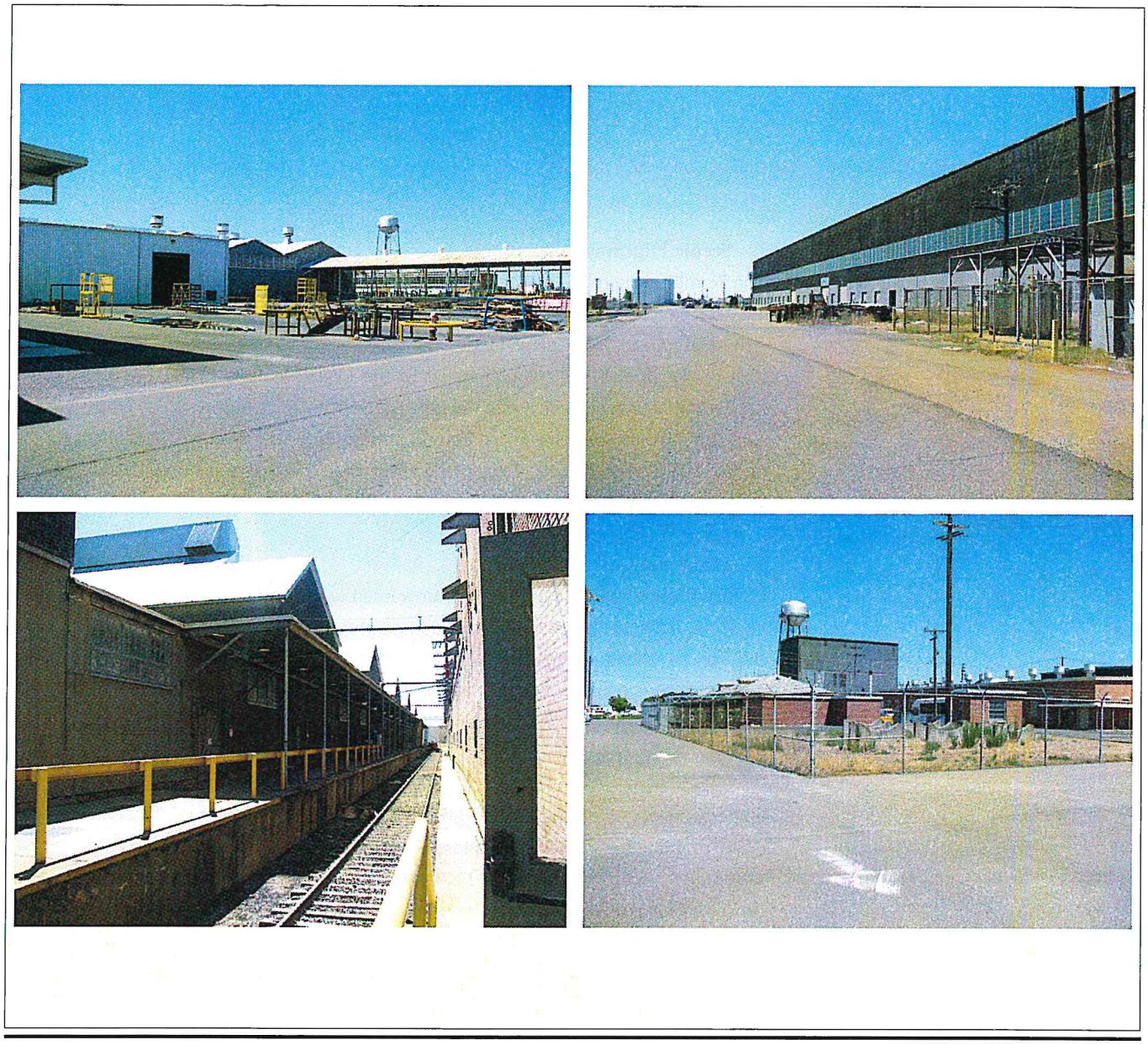


FIGURE 4.1-1

VIEWS WITHIN THE RAAP SITE

3. Scenic Highways

The 28-mile stretch of Interstate 5, running through Stanislaus County from the Merced County Line north to the San Joaquin County Line, is an Officially Designated State Scenic Highway. Interstate 5, which is about 20 miles west of the project site, runs parallel to the Delta-Mendota Canal and the California Aqueduct, which transformed portions of the Central Valley from semi-desert land into a thriving agricultural area. No other roadway segments in the county are officially designated or identified as eligible for designation as a scenic highway in the California Scenic Highway Mapping System.[2]

4. Light and Glare

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and overlighting. Excessive light and glare can also be visually disruptive to humans and nocturnal animal species, and often indicate an unnecessarily high level of energy consumption. Current sources of light at the RAAP site include the existing structures and security lighting.

Glare is mainly the result of the sun reflecting off surfaces such as glass windows in buildings, the windshields of vehicles in surface parking lots, or warehouse roof-tops and other light-colored surfaces. Trees or vegetative cover can serve to lessen the effects of glare. The southern portion of the site has almost no vegetative cover, and there are many sources of glare on-site, including vehicles in surface parking lots, metallic structures on the roofs of site buildings, large expanses of concrete between buildings, silver-colored hazardous waste storage tanks, glass windows, and flat, light-colored roof-tops.

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[2] CalTrans, California Scenic Highway mapping System, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed on February 15, 2012.

C. Standards of Significance

The RAAP Site Specific Plan would have a significant aesthetics impact if they would:

a. Have a substantial adverse effect on a scenic vista.

b. Substantially degrade the view from a scenic highway, including, but not limited to, trees, rock outcroppings, and historic buildings.

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

d. Expose people on- or off-site to substantial light or glare.

D. Impact Discussion

The following discussion provides an analysis of potential project and cumulative aesthetic impacts that could occur as a result of implementation of the RAAP Site Specific Plan.

1. Project Impacts

a. Have a substantial adverse effect on a scenic vista.

The Plan would have a significant environmental impact if it would substantially, demonstrably, and negatively affect the scenic views identified in the Riverbank General Plan. As described above, the General Plan emphasizes the importance of scenic views along the Stanislaus River, but no other scenic views are identified in the Riverbank General Plan. Implementation of the Plan would not impact scenic views along the Stanislaus River, and therefore there would be *no impact* on General-Plan-designated scenic views.

b. Substantially degrade the view from a scenic highway, including, but not limited to, trees, rock outcroppings, and historic buildings.

The Plan Area is located approximately 20 miles to the east of Interstate 5, an Officially Designated State Scenic Highway, as it runs through Stanislaus County from the Merced County Line north to the San Joaquin County

Line. It is not visible from Interstate 5. Therefore, buildout of the Plan would have *no impact* on views from a scenic highway.

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

The existing visual character of the RAAP site is predominantly industrial. The site's visual character is composed of corrugated metal warehouses, chillers, smokestacks, water and gas storage tanks, the metal tubing, and electrical wiring. Viewing the site is possible from all directions surrounding the property, through barbed wire fences.

Surrounding the RAAP site are low- and medium-density residential neighborhoods. The boundary between the RAAP site limits and the adjacent residences is abrupt and striking. The industrial warehouse character of the RAAP site is buffered from the neighboring residences by fallow grass fields and fences. The character of the industrial site presents a significant contrast to the surrounding residential area. The single-family homes belong to recently-built subdivisions, with architectural appeal and maintained landscaping.

The RAAP Site Specific Plan contains several policies that address potential aesthetic impacts. Policy LUD-2 ensures that new development follows standards and guidelines for architectural and landscape design included in the Specific Plan. Additionally, Policy LUD-3 ensures that new development should respond appropriately to adjacent development, particularly residential neighborhoods through screening, setbacks, and other mechanisms. Policy LUD-4 encourages significant climate-appropriate landscaping along frontages as part of private development, and Policy LUD-5 encourages appropriate setbacks, screening, and landscaping along Claus Road, Claribel Road, and the anticipated Central Avenue extension. Finally, Policy LUD-6 states that all entries to the North End Cap property and Riverbank Industrial Complex should be accentuated with gateway features, such as special landscaping, building accents, signage, open space, or other design features. Taken together, the implementation of the RAAP Site Specific Plan would provide a

beneficial impact to the existing visual character or quality of the site and its surroundings.

d. Expose people on- or off-site to substantial light or glare.

Development and improvements recommended in the Specific Plan could have an adverse effect on day or nighttime views by contributing to substantial light or glare. New development could introduce additional nighttime lighting, particularly for commercial uses. As described above, the southern portion of the site has many sources of glare on-site, including vehicles in surface parking lots, metallic structures on the roofs of site buildings, large expanses of concrete between buildings, silver-colored hazardous waste storage tanks, glass windows, and flat, light-colored roof-tops.

However, the Riverbank General Plan contains policies that would mitigate these potential impacts. As listed in Section A.2 above, Policy DESIGN-17.2 states that lighting in development projects shall include low, pedestrian scaled, ornamental street lights, and shall otherwise prevent glare and spillover onto adjacent properties and to prevent any glare that could affect motorists or bicyclists. Additionally, Policy CONS-7.6 states that lighting shall be designed to avoid glare, prevent light spillage onto adjacent properties, avoid adverse impacts to nocturnal wildlife, and avoid light pollution that would contribute light to the nighttime sky. The Design Guidelines of the RAAP provides significant guidance for exterior lighting, including design, height, and operation. The Design Guidelines call for at least 75 percent of a building's front façade and at least 25 percent of all other building façades to consist of non-metallic surfaces and encourage trees and vegetation on-site, which would lessen the effects of glare. Taken together, implementation of the Riverbank General Plan and the RAAP Site Specific Plan would result in a *less-than-significant* impact from substantial light or glare.

2. Cumulative Impacts

This section analyzes potential impacts to aesthetics and visual quality that could occur from a combination of the Plan with other reasonably foreseeable projects in the surrounding area. For this analysis, the area of potential

effect is taken as the City of Riverbank and the unincorporated portions of Stanislaus County to the south and east of the Plan Area. A cumulative impact would be considered significant if, taken together with past, present and reasonably foreseeable projects in area of potential effect, it would result in a substantial adverse effect on a designated scenic vista, a degradation of the view from a scenic highway, exposure of people on- or off-site to substantial light or glare, or if it would result in a substantial degradation of the visual quality or character of the Plan Area and its surroundings.

As noted above, the Specific Plan would have no impact on scenic vista or views from a scenic highway, so it would not contribute to cumulative impacts. The Riverbank General Plan policies listed in Table 4.1-1 in the Riverbank General Plan are enhanced by the policies included in the Specific Plan with respect to aesthetics. The requirements and recommendations in the RAAP Site Specific Plan are intended to improve the visual and aesthetic character of the site, resulting in beneficial impacts. Therefore, the RAAP Site Specific Plan would result in a *less-than-significant* cumulative impact on aesthetic resources.

E. Impacts and Mitigation Measures

Since there are no significant impacts related to aesthetics as a result of the RAAP Site Specific Plan, no mitigation measures are required.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This chapter discusses agricultural resources in and around the Plan Area and evaluates the potential impacts to agricultural and forest resources associated with implementation of the RAAP Specific Plan. The following evaluation assesses farmland and forestland conversion, Williamson Act contracts, and changes in the physical environment that could contribute to farmland and forestland conversion.

A. Regulatory Framework

This section summarizes key State and local regulations, policies and programs pertaining to agriculture and forestry in the RAAP Plan Area.

1. State Regulations

a. Farmland Mapping and Monitoring Program

Within the California Natural Resources Agency, the State Department of Conservation provides services and information that promote informed land-use decisions and sound management of the state's natural resources. The Department manages the Farmland Mapping and Monitoring Program (FMMP), which supports agriculture throughout California by developing maps and statistical data for analyzing land use impacts to farmland. FMMP rates the production potential of agricultural land according to the following classifications:

- **Prime Farmland** has the best combination of physical and chemical features able to sustain long-term agricultural production. Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance** is similar to Prime Farmland but with minor shortcomings, such as steeper slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Unique Farmland** consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- **Farmland of Local Importance** is land that is important to the local agricultural economy. It is determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land** is the land on which the existing vegetation is suited to the grazing of livestock.
- **Urban and Built-Up Land** is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
- **Other Land** is land not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetlands, riparian areas not suitable for livestock grazing, confined livestock, poultry, aquaculture facilities, and strip mines. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as other land.
- **Water** is used to describe perennial water bodies with an extent of at least 40 acres.

b. Williamson Act

The California Land Conservation Act, better known as the Williamson Act, preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts administered by the County under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting voluntarily. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their

actual use, rather than potential market value.[1] Local governments receive an annual subvention of forgone property tax revenues from the State via the Open Space Subvention Act of 1971.

c. Z'Berg Nejedly Forest Practice Act

The 1973 Z'Berg Nejedly Forest Practice Act (FPA) is the primary governing statute on matters related to forestry in the State of California. The FPA requires an owner of timberland who wishes to harvest timber for commercial purposes to submit one of several types of timber harvest plans, depending on the nature of the operation and the type of landowner involved, to the California Department of Forestry and Fire Protection (CDF) for its review and approval.

d. Timberland Productivity Act

California has also enacted the 1976 Timberland Productivity Act (TPA), which establishes a special zoning designation for commercial timberland that restricts the use of such land to timberland production and compatible uses and which offers certain tax advantages.

e. California Forest Practice Rules

The purpose of the Forest Practice Rules is to implement the provisions of the Z'Berg-Nejedly Forest Practice Act in a manner consistent with other laws, including but not limited to, the Timberland Productivity Act, the California Environmental Quality Act (CEQA), the Porter Cologne Water Quality Act, and the California Endangered Species Act. The California Forest Practice Rules protect the forest and associated resources on non-Federal lands from depletion and degradation through specific rules applicable to timber harvest planning and operations. These detailed rules apply whenever forest products are sold, bartered, exchanged, or traded.

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[1] California Department of Conservation, 2002. *California Land Conservation (Williamson) Act Status Report*, page 1.

2. Local Regulations

a. City of Riverbank General Plan

The Riverbank General Plan includes several goals and policies that relate to agricultural resources. Table 4.2-1 lists these goals and policies.

b. Sustainable Agricultural Strategy

General Plan Policy CONS-3.1 calls for the City to prepare a Sustainable Agricultural Strategy so as to minimize the loss of agricultural production to urban development through annexation to Riverbank and to ensure that, on a regional level, there is no significant net loss of agricultural production within the Stanislaus River Watershed. The Strategy would provide a roadmap for decision-makers, laying out guidance for reasonably balancing the economic, social, and environmental benefits of a proposed project with the need to conserve the agricultural production of the Stanislaus Watershed.

As of April 2011, the Sustainable Agricultural Strategy had not yet been prepared; however, a Draft Sustainable Agricultural Strategy Report was produced by the Sustainable Agricultural Committee in January 2010. The Draft Report recommends the use of the California Agricultural Land Evaluation and Site Assessment (LESA) Model prepared by the California Department of Conservation as an objective-based system for identifying impacts to agricultural resources. Appendix G of CEQA also recommends the LESA Model for determining the significance of impacts to agricultural resources.

B. Existing Conditions

This section discusses the existing conditions pertaining to agricultural and forest resources in the Plan Area.

TABLE 4.2-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AGRICULTURE**

Goal/Policy Number	Goal/Policy Content
Goal CONS-3	**Support the practice of agriculture and the resources associated with farming in the riverbank planning area and beyond.**
Policy CONS-3.1	The City will prepare a comprehensive Sustainable Agricultural Strategy intended to conserve agricultural production in the Stanislaus River Watershed, herein defined as the area within Stanislaus County and San Joaquin County between the Tuolumne and Calaveras Rivers, attributable to implementation of the 2025 General Plan. This strategy should provide flexibility so that it can be tied to land-use and regional agricultural preservation policies, and is intended to be funded on a fair-share basis by those projects that have a significant impact on the conversion of Important Farmlands, a non-renewable resource, to urban use. In determining a level of significance, it is the intent of the City to use quantifiable, measurable inputs and if a project has a significant impact on Farmland resources, then the project will mitigate for this impact.
Policy CONS-3.2	Ongoing agricultural practices on fertile lands in the western portion of the Riverbank Planning Area shall be protected from encroachment of urban use through the use of buffers. The buffers should also protect residential development from the effects of existing agricultural operations. The buffer shall be designed to protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust and the application of agricultural chemicals on residential development. The width of the buffer shall be 300 feet, except that the width of the buffer may be reduced where a project applicant demonstrates that a narrower buffer would protect the feasibility of ongoing agricultural activities on nearby lands and reduce the effects of noise, dust, and the application of agricultural chemicals on residential development. Buffer areas may remain as open space or may be used for stormwater management; renewable energy production; community recreation amenities; or any other allowed use consistent with this policy.

Source: City of Riverbank General Plan 2005-2025.

Riverbank and the Plan Area are located in California's Central Valley, one of the most highly productive agricultural regions in the world.[2] The region produces high-value agricultural products, including fruits, vegetables, nuts, meats, and dairy products.[3] Sales of agricultural commodities from the Central Valley account for 6.5 percent of all agricultural commodities sold nationwide. The economic productivity and diversity of agricultural commodities from the Central Valley is a result of the region's high quality agricultural land.

Generally in Riverbank, soils on the west side of the city are more conducive to long term agricultural production than those on the east side.[4] East side soils are generally less productive as farmland, and as a result, east side property owners have tended to subdivide their land into ranchettes so as to maximize investment return. By contrast, west side properties have generally remained in large parcels and in active agricultural use.

1. Farmland of Concern

Agricultural land exists within and surrounding the City of Riverbank. Under CEQA, farmland of concern is Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. These categories are defined according to the United States Department of Agriculture land inventory and monitoring criteria, as modified for California. Approximately 62 percent (5,351 acres) of land within the City of Riverbank sphere of influence is made up of farmland of concern, including almost 40 percent (3,431 acres) consists of Prime Farmland as defined by the FMMP.[5] As shown in Figure 4.2-1, most land to the west of Riverbank is Prime Farmland, while land to the east and southeast of

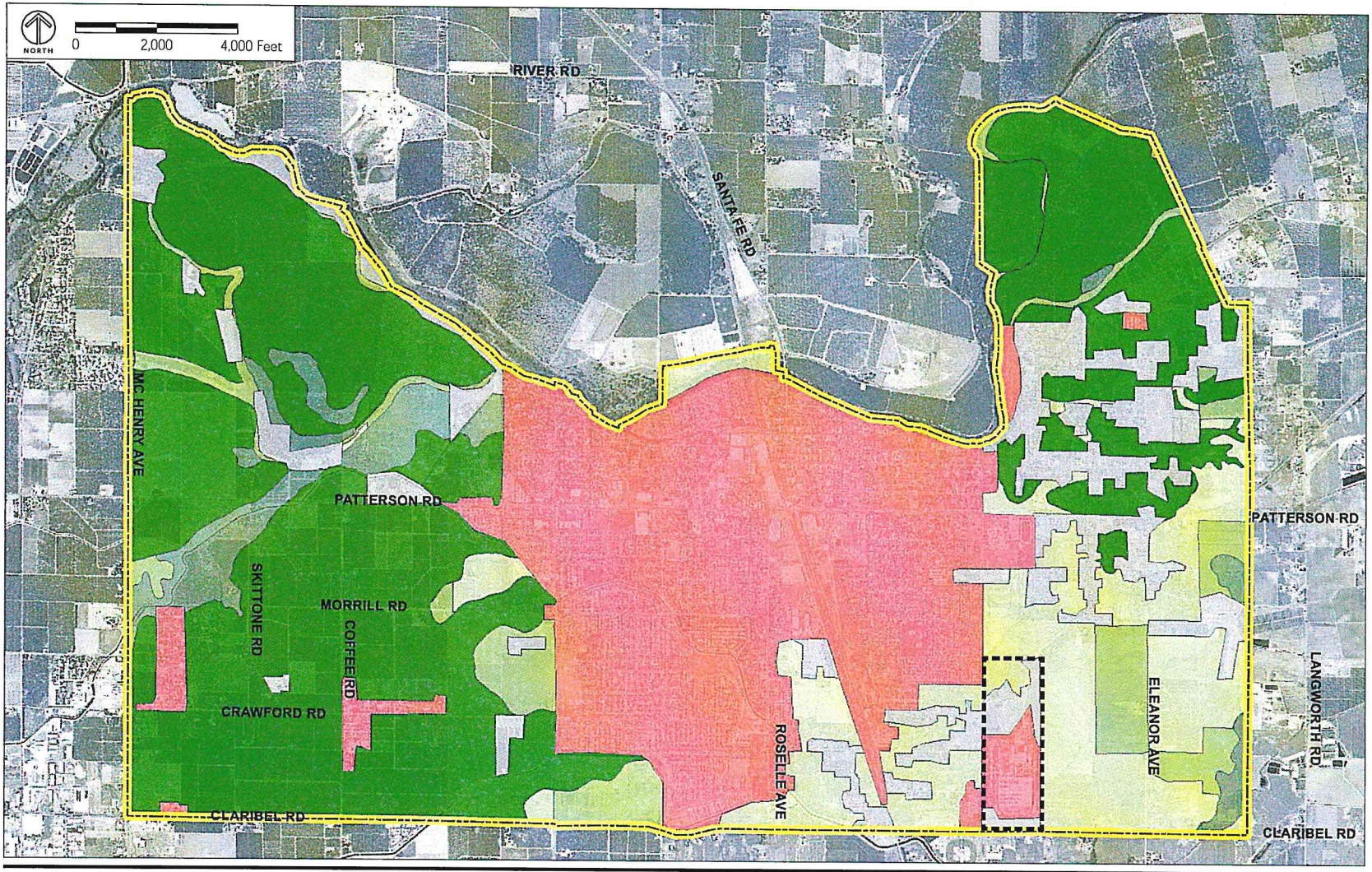
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[2] For the purposes of this EIR, the Central Valley is comprised of the following eleven California counties: Fresno, Kern, Kings, Madera, Merced, Sacramento, San Joaquin, Stanislaus, Sutter, Tulare, and Yolo.

[3] United States Department of Agriculture, 2009. *2007 Census of Agriculture.*

[4] City of Riverbank, 2010. *Draft Sustainable Agricultural Strategy Report.*

[5] City of Riverbank, 2005. *City of Riverbank General Plan Draft Environmental Impact Report,* page 4.3-10.



Source: City of Riverbank General Plan EIR.

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- RAAP Site
- Farmland of Local Importance
- Urban and Built-Up Land
- Other Land
- Planning Area

FIGURE 4.2-1
IMPORTANT FARMLAND

the city is generally Farmland of Local Importance or Unique Farmland.[6] Farmland to the west of Riverbank is generally used for fruit and nut orchards; to the south and east it is used as pastureland. There is no farmland of concern in the Plan Area.

2. Williamson Act Land

There is no land under active Williamson Act contract in the Plan Area. However, parcels to the north, east, and south of the Plan Area are protected under the Williamson Act. Stanislaus County has almost 700,000 acres protected by the Williamson Act, by a Farmland Security Zone, by an agricultural conservation easement, or by some other restriction on the conversion of agricultural uses.[7] Stanislaus County ranks seventh among California counties for the most acres protected under the Williamson Act.

3. Other Agricultural Land

Historically, before the establishment of the RAAP, the Plan Area was used for agriculture.[8] After military purchase in 1942, the majority of the agricultural land on the site was developed; however, 20 acres at the northern end of the Plan Area remained as open space. Since closure of the base, the area has been leased to local farmers as grazing land. Under the FMMP, this land is designated as Farmland of Local Importance.[9] Adjacent land immediately to the north and east of the Plan Area is similarly designated.

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[6] City of Riverbank, 2005. *General Plan Update Background Report: Land Use, Population, and Agricultural Resources*, page LAND-14.

[7] City of Riverbank, 2005. *City of Riverbank General Plan Draft Environmental Impact Report*, page 4.2-2.

[8] U.S. Army Corps of Engineers: Mobile District, 2009. Environmental Assessment for BRAC 05 Disposal and Reuse of the Riverbank Army Ammunition Plant, California, page 4-4.

[9] Farmland Mapping and Monitoring Program, "Northern Stanislaus County," http://redirect.conservation.ca.gov/DLRP/fmmp/county_info_results.asp, accessed on April 12, 2011.

4. **Forest Land**

Forest land is defined, according to the California Public Resources Code Section 12220, as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The Plan Area currently contains very few trees and there is no forest land meeting this definition within the Plan Area.

C. Standards of Significance

The RAAP Specific Plan would have a significant impact on agriculture if it would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (or "farmlands of concern under CEQA"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

d. Result in the loss of forest land or conversion of forest land to non-forest use.

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or of conversion of forest land to non-forest use.

D. Impact Discussion

The following discussion provides an analysis of potential project and cumulative agricultural and forest resource impacts that could occur as a result of implementation of the RAAP Site Specific Plan.

1. Project Impacts

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (or "farmlands of concern under CEQA"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

As shown in Figure 4.2-1, the Plan Area does not contain any areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The areas of Farmland of Local Significance in the Plan Area are not considered farmland of concern under CEQA. Therefore implementation of the Plan would result in *no impact* with respect to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract.

The General Plan land use designation for the principal site is Industrial/Business Park (I/BP). Surrounding land use designations include Medium Density Residential (MDR), Low Density Residential (LDR), and Community Commercial (CC). There are no Agricultural Resource Conservation Areas (AG) in the immediate vicinity of the Plan Area. Further, neither of the two non-contiguous sites that make up the Plan Area contains Williamson Act parcels. Therefore, implementation of the Plan would no conflict with existing agricultural zoning or Williamson Act contracts and there would be *no impact.*

c. Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

There are no timber resources in Riverbank, so the City of Riverbank Zoning Ordinance (Municipal Code Title XV, Chapter 153) does not establish zoning for either forest or timberland. Therefore, implementation of the Plan would

not conflict with existing zoning for forest or timberland and there would be *no impact.*

d. Result in the loss of forest land or conversion of forest land to non-forest use.

The Plan Area currently contains very few trees and buildout of the Plan would not result in conversion of forest land in this area. Consequently, there would be *no impact* with respect to conversion of forest land as a result of Plan implementation.

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or of conversion of forest land to non-forest use.

i. On-site conversion of farmland.

As described above, a portion of the Project Area, approximately 20 acres in size, is designated as Farmland of Local Importance under the FMMP. This land is currently leased to local farmers for grazing; however, with implementation of the proposed Plan, this land would be redeveloped as an industrial/business park, featuring light industrial uses, landscaping, and structures housing research and development activities as described in Chapter 3 of this EIR. In order to determine whether this conversion of agricultural land to non-agricultural uses would be considered a significant environmental impact, the LESA model was used, pursuant to CEQA Appendix G and the City of Riverbank Draft Sustainable Agricultural Committee Report of January 2010.

The LESA model is a point-based system used to rate the relative value of agricultural land resources. The model measures two separate sets of factors: Land Evaluation (LE) factors, which includes factors that measure the inherent soil based qualities of land as they relate to agricultural suitability; and Site Assessment (SA) factors, which includes factors that are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land. For a given project, each factor is separately rated on a 100 point scale, then weighted relative to the others, and combined to derive a single numeric score out of a maximum attainable score

of 100 points. A LESA score of 39 points or less is not considered significant under CEQA. A significant environmental impact would result with a score of:

- 40 to 59 points, only if LE and SA sub-scores are each greater than or equal to 20 points
- 60 to 79 points, unless either LE or SA sub-score is less than 20 points
- 80 to 100 points

The conversion of the 20-acre portion of the Plan Area designated as Farmland of Local Importance would not result in a significant LESA score. Based on the land capability classification and the storie index rating, conversion of the 20-acre portion of the Plan Area would result in an LS subscore of 17.5.

It was not possible to determine the SA subscore given the amount of information available related to water availability and surrounding uses. However, because a weighted factor rating for the project size was determined to be 6, and assuming the other factor areas achieved the highest point values (for a total of 35 points), under a worst case scenario, the SA subscore would total no more than 41 points.

Adding the LS subscore (17.5) to the SA subscore (41) results in a Total LESA Score of 58.5. Accordingly, based on the LESA Model Scoring Threshold above, conversion of the 20-acre portion of the Plan Area would not be considered significant because the point total would be less than 60 and only one subscore is greater than 20 points. As a result, a *less-than-significant* impact would occur.

ii. Off-site conversion of farmland.

Agricultural uses on neighboring lands would not be adversely affected by the establishment of conversion of Farmland of Local Importance in the Plan Area because Williamson Act contracts are in place to preserve agricultural use on these neighboring parcels. Additionally, the Industrial Design Guidelines proposed in the Plan include a stipulation that landscaping be used to buffer and merge various uses. Compliance with these design guidelines

would further reduce the effects of Plan buildout on neighboring agricultural activity.

2. Cumulative Impacts

This section analyzes potential impacts to agricultural and forest resources that could occur from a combination of the Plan with other reasonably foreseeable projects in the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank sphere of influence, as defined in the 2005-2025 Riverbank General Plan. A cumulative impact would be considered significant if, taken together with past, present, and reasonably foreseeable projects in the City of Riverbank sphere of influence, it would result in the conversion of farmland of concern to non-agricultural use, the conversion of forest land to non-forest use, a conflict with existing zoning for agricultural or forest use, a conflict with a Williamson Act contract, or otherwise involve changes in the existing environment which could cause the conversion of farmland to non-agricultural use or forest land to non-forest use.

As described above, implementation of the Plan would not directly result in the conversion of farmland of concern to non-agricultural use or forest land to non-forest use, and therefore would not cause or contribute to an associated cumulative impact. Neither would implementation of the Plan result in a conflict with existing zoning for agricultural or forest use or with a Williamson Act contract on land in the Plan Area. As such, implementation of the Plan would not cause or contribute to a cumulative impact related to conflict with existing zoning or Williamson Act contracts. Implementation of the Plan would not cause rezoning of forest land, timberland, or timberland zoned Timberland Production, and therefore there would be no cumulative impact.

A 20-acre portion of the Plan Area is currently designated as Farmland of Local Importance under the FMMP, and parcels to the north and east of the Plan Area, also designated as Farmland of Local Importance, are under Williamson Act contract. In and of itself, the conversion of the 20-acre portion of the Plan Area to non-agricultural use would not be considered significant

under CEQA by virtue of its LESA score, as detailed above. Additionally, the General Plan designated the RAAP site and surrounding parcels as industrial and anticipated conversion of agricultural land to non-agricultural uses. Although the General Plan EIR determined this loss of agricultural land to be a significant and unavoidable impact, this conversion has already been anticipated through the General Plan.

However, other projects in the vicinity of the RAAP site could convert to non-agricultural use through the implementation of the General Plan for the City of Riverbank. The General Plan EIR identified a significant unavoidable impact resulting from the loss of important farmland resulting from buildout under the General Plan. For this reason, implementation of the RAAP Specific Plan would contribute to a *significant impact* resulting from the conversion of farmland. Overall, cumulative impacts to agricultural and forest resources would be consider *less than significant.*

E. Impacts and Mitigation Measures

Since there are no significant impacts related to agricultural and forest resources as a result of the Plan, no mitigation measures are required.

4.3 AIR QUALITY

This section assesses the air quality impacts associated with implementation of the Specific Plan. Included in this section is background information on air quality and criteria air pollutants, a summary of the regulatory framework that pertains to the Specific Plan, and a summary of existing air quality conditions.

A. Background Information

1. Topographic Considerations

The City of Riverbank (City) is located in the northern portion of the San Joaquin Valley Air Basin. The California Air Resources Board (CARB) defines the boundaries of the basin by the San Joaquin Valley within the Sierra Nevada Mountains to the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. The valley is basically flat with a slight down510sward gradient to the northwest. The valley opens to the ocean at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley, thus, could be considered a "bowl" with the primary opening to the north. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of air pollutants from the basin. Wind flow is usually down the valley from the north, but the Tehachapi Mountains block or restrict the southward progression of airflow. The Sierra Nevada is a substantial barrier from the usual winds that have a general westerly flow. The topographical features result in weak airflow. The flow is further restricted vertically by inversion layers that are common in the San Joaquin Valley air basin throughout the year. An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 1,500 to 3,000 feet above the valley floor. Airflow is considerably restricted since mountain ranges surrounding the valley are generally above the inversion. These inversions lead to a build-up of ozone and ozone precursor pollutants. During the fall and winter months, strong surface-based inversions occur from 500 to 1,000 feet above the valley floor (SJVAPCD, 1998). Win-

tertime inversions trap very stable air near the surface and lead primarily to a build-up of particulate matter air pollutants. Very light winds are also characteristic with these wintertime surface-based inversions.

2. Air Basin Characteristics

The climate of the Specific Plan Area is characterized by hot dry summers and cool, mild winters. Clear days are common from spring through fall. Daytime temperatures in the summer often approach or exceed 100 degrees, with lows in the 60s. In the winter, daytime temperatures are usually in the 50s, with lows around 35 degrees. Radiation fog is common in the winter, and may persist for days. Partly to mostly cloudy days are common in winter, as most precipitation received in the Valley falls from November through April.

Winds are predominantly up-valley (flowing from the north) in all seasons, but more so in the summer and spring months.[1] In this flow, winds are usually from the north end of the Valley and flow in a south-southeasterly direction, through Tehachapi Pass, into the Southeast Desert Air Basin. Annually, up-valley wind flow (i.e. northwest flow with marine air) is most common, occurring about 40 percent of the time. This type of flow is usually trapped below marine and subsidence inversions, restricting outflow through the Sierra Nevada and Tehachapi Mountains. The occurrence of this wind flow is almost 70 percent of the time in summer, but less than 20 percent of the time in winter. Winter and fall are characterized by mostly light and variable wind flow. Pacific storm systems do bring southerly flows to the valley during late fall and winter. Light and variable winds, less than 10 mph, are common in the colder months.

Superimposed on this seasonal regime is the diurnal wind cycle. In the Valley, this cycle takes the form of a combination of a modified sea breeze-land breeze and mountain-valley regimes. The sea breeze-land breeze regime typically has a modified sea breeze flowing into the Valley from the north during

[1] California Air Resources Board (CARB), 1984.

the late day and evening and then a land breeze flowing out of the Valley late at night and early in the morning. The mountain-valley regime has an upslope (mountain) flow during the day and a down slope (valley) flow at night. These effects create a complexity of regional wind flow and pollutant transport within the Valley.

The pollution potential of the San Joaquin Valley is very high. The San Joaquin Valley has one of the most severe air pollution problems in the State and the Country. Surrounding elevated terrain in conjunction with temperature inversions frequently restrict lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in late spring, summer, and early fall are ideal conditions for the formation of ozone, where the Valley frequently experiences unhealthy air pollution days. Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high PM_{10} (particulate matter with a diameter less than 10 microns) concentrations and elevated carbon monoxide levels.

3. Criteria Air Pollutants and Their Health Effects

The primary criteria air pollutants emitted by the Specific Plan would include ozone (O_3) precursors (NO_x and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Other criteria pollutants, such as lead (Pb) and sulfur dioxide (SO_2), would not be substantially emitted by the Specific Plan or associated traffic, and air quality standards for these criteria pollutants are being met throughout the San Joaquin Valley Air Basin. Accordingly, Pb, and SO_2 are not discussed further.

a. Ozone (O_3)

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the ex-

change of oxygen and carbon dioxide between the air and blood takes place). Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Short-term ozone exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest. Sensitivity to ozone varies among individuals, but about 20 percent of the population is sensitive to ozone with exercising children being particularly vulnerable.

Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NO_x) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as ozone precursors.

b. Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue, and causes reduced lung capacity, impaired mental abilities and central nervous system function, and induces angina in persons with serious heart disease. Primary sources of CO in ambient air are passenger cars, light-duty trucks, and residential wood burning. The monitored CO levels in the Valley during the last 10 years have been well below ambient air quality standards.

c. Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO2 is the risk of acute and chronic respiratory disease. NO2 is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO2 is a reddish-

brown colored gas often observed during the same conditions that produce high levels of O_3 and can affect regional visibility. NO_2 is one compound in a group of compounds consisting of oxides of nitrogen (NO_x). As described above, NO_x is an O_3 precursor compound. Monitored levels of NO_2 in the Valley are below ambient air quality standards.

d. Particulate Matter (PM)

Respirable particulate matter, PM_{10}, and fine particulate matter, $PM_{2.5}$, consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the Federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. These fine particulates have been demonstrated to decrease lung function in children. Certain components of PM are linked to higher rates of lung cancer. Very small particles of certain substances (e.g. sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g. chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing pas-

sages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

In 1983, CARB replaced the standard for "suspended particulate matter" with a standard for suspended PM_{10} or "respirable particulate matter." This standard was set at 50 µg/m3 for a 24-hour average and 30 $\mu g/m^3$ for an annual average. CARB revised the annual PM_{10} standard in 2002, pursuant to the Children's Environmental Health Protection Act. The revised PM_{10} standard is 20 $\mu g/m^3$ for an annual average. $PM_{2.5}$ standards were first promulgated by the EPA in 1997 and were recently revised in late 2006 to lower the 24-hour $PM_{2.5}$ standard to 35 $\mu g/m^3$ for 24-hour exposures. That same action by EPA and revoked the annual PM_{10} standard due to lack of scientific evidence correlating long-term exposures of ambient PM_{10} with health effects. CARB has only adopted an annual average $PM_{2.5}$ standard, which is set at 12 $\mu g/m^3$. This is more stringent than the NAAQS of 15 $\mu g/m^3$.

4. Toxic Air Contaminants

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants (HAPs) under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level.

HAPs are the air contaminants identified by US EPA as known or suspected to cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile source air toxics (MSATs) are a subset of the 188 HAPS. Of the 21 HAPs identified by EPA as MSATs, a priority list of six priority HAPs were identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to

control mobile source emissions (by 57 percent to 67 percent depending on the contaminant)[2].

California developed a program under the Tanner Toxics Act (AB 1807) to identify, characterize, and control toxic air contaminants (TACs). Subsequently, AB 2728 incorporated all 188 HAPs into the AB 1807 process. TACs include all HAPs plus other containments identified by CARB. These are a broad class of compounds known to cause morbidity or mortality (cancer risk). TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g. dry cleaners). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (diesel particulate matter [DPM]) was found to comprise much of that risk. CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid

[2] Federal Highway Administration, 2006. *Interim Guidance on Air Toxic Analysis in NEPA Documents.*

waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008 CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles[3]. The regulation requires affected vehicles to meet specific performance requirements between 2011 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

Exposure to TACs is usually evaluated in terms of health risk or cancer risk. For cancer health effects, the risk is expressed as the number of chances in a population of a million people who might be expected to get cancer over a 70-year lifetime.

B. Regulatory Framework

The Federal and California Clean Air Acts have established ambient air quality standards for different pollutants. National ambient air quality standards (NAAQS) were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include CO, ozone, NO_2, PM_{10}, SO_2, and lead. In 1997, EPA added fine particulate matter or $PM_{2.5}$ as a criteria pollutant. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. California ambient air quality standards (CAAQS) include the NAAQS pollutants and also hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. These additional CAAQS pollutants tend to have unique sources and are not typically examined in environmental air quality assessments. In addition, lead concentrations have decreased dramatically since it was removed from motor vehicle fuels.

[3] http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

1. Federal Regulations

At the federal level, the United States Environmental Protection Agency (US EPA) administers and enforces air quality regulations. Federal air quality regulations were developed primarily from implementation of the Federal Clean Air Act. If an area does not meet NAAQS over a set period (three years), EPA designates it as a "nonattainment" area for that particular pollutant. EPA requires states that have areas that do not comply with the national standards to prepare and submit air quality plans showing how the standards would be met. If the states cannot show how the standards would be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). Under severe cases, EPA may impose a federal plan to make progress in meeting the federal standards.

EPA also has programs for identifying and regulating hazardous air pollutants. The Clean Air Act requires EPA to set standards for these pollutants and sharply reduce emissions of controlled chemicals. Industries were classified as major sources if they emitted certain amounts of hazardous air pollutants. The US EPA also sets standards to control emissions of hazardous air pollutants through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

The San Joaquin Valley Air Basin is subject to major air quality planning programs required by the federal Clean Air Act (CAA) (1977, last amended in 1990, 42 United States Code [USC] 7401 *et seq.*) to address ozone, particulate matter air pollution, and carbon monoxide. The CAA requires that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the Clean Air Act. These plans are submitted to the State, which after approval, submits them to US EPA as the State Implementation Plan (SIP).

2. State Regulations

The California Clean Air Act of 1988, amended in 1992, outlines a program for areas in the State to attain the CAAQS by the earliest practical date. The California Air Resources Board (CARB) is the state air pollution control agency and is a part of the California Environmental Protection Agency. The California Clean Air Act sets more stringent air quality standards for all of the pollutants covered under national standards, and additionally regulates levels of vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. If an area does not meet CAAQS, CARB designates the area as a nonattainment area. The San Joaquin Valley Air Basin does not meet the CAAQS for ozone, PM_{10} and $PM_{2.5}$. CARB requires regions that do not meet CAAQS for ozone to submit clean air plans that describe measures to attain the standard or show progress toward attainment.

In addition to the US EPA, CARB further regulates the amount of air pollutants that can be emitted by new motor vehicles sold in California. Motor vehicle emissions standards have always been more stringent than federal standards since they were first imposed in 1961. CARB has also developed Inspection and Maintenance (I/M) and "Smog Check" programs with the California Bureau of Automotive Repair. Inspection programs for trucks and buses have also been implemented. CARB also sets standards for motor vehicle fuels sold in California.

In April 2005, CARB released the final version of its *Air Quality and Land Use Handbook: A Community Health Perspective.* This handbook is intended to encourage local land use agencies to consider the risks from air pollution before they approve the siting of sensitive land uses, including residences, near sources of air pollution. CARB makes recommendations regarding the siting of sensitive land uses near freeways, truck distribution centers, rail yards, marine ports, dry cleaners, gasoline dispensing stations, and other air pollution sources. These "advisory" recommendations include general setbacks or buffers from air pollution sources. Unlike industrial or stationary sources of air pollution, the siting of new sensitive land uses does not require air quality

permits or approval by air districts. CARB recommends setbacks of 500 feet between freeways and new sensitive receptors, such as residences.[4]

3. Regional and Local Regulations

a. San Joaquin Valley

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings Tulare and the San Joaquin Valley portion of Kern. The primary role of the SJVAPCD is to develop plans and implement control measures in the San Joaquin Valley to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources.

i. SJVAPCD Indirect Source Review Rule

On December 15, 2005, the SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursor (i.e. ROG and NOx) and PM10 emissions from new land use development projects. The rule is the result of state requirements outlined in the regions' portion of the State Implementation Plan (SIP). The SJVAPCD's SIP commitments are contained in the 2004 Extreme 1-Hour Ozone Attainment Demonstration Plan, the 2007 8-Hour Ozone Plan, the 2007 PM_{10} Maintenance Plan and the 2008 $PM_{2.5}$ Plan. New projects that would generate substantial air pollutant emissions, for which final discretionary approval was granted after March 1, 2006 are subject to this rule. The rule requires projects to mitigate both construction and operational period emissions by applying the SJVAPCD-approved mitigation measures and paying fees into the Air Quality Mitigation Fee Fund to support programs that reduce emissions. Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus expected costs to cover administration of the program.

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[4] California Air Resources Board (CARB), 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*, page 4.

ii. *Regulation VIII – Fugitive PM10*

SJVAPCD controls fugitive PM_{10} through Regulation VIII (Fugitive PM_{10} Prohibitions). The purpose of this regulation is to reduce ambient concentrations of PM_{10} by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by SJVAPCD to cover costs for reviewing plans and conducting field inspections.

b. Riverbank General Plan

The overarching goal of the City's General Plan[5] in regards to air quality is to minimize Riverbank's contribution to existing and potential future air quality problems, whether experienced locally, regionally, or globally. The following are goals and policies that relate to the Specific Plan (see Table 4.3-1):

4. National and State Ambient Air Quality Standards

The CAA and CCAA promulgate, respectively, national and state ambient air quality standards. Air quality standards have been established by US EPA (i.e. NAAQS) and California (i.e. CAAQS) for specific air pollutants most pervasive in urban environments. The NAAQS and CAAQS are shown in Table 4.3-2. Ambient standards specify the concentration of pollutants to which the public may be exposed without adverse health effects. Individuals vary widely in their sensitivity to air pollutants, and standards are set to protect more pollution-sensitive populations (e.g. children and the elderly). National and state standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent. For planning purposes, regions like the San Joaquin Valley Air Basin are given an air quality status designation by the federal and state regulatory agencies. Areas with monitored pollutant concentrations that are lower than ambient air quality

[5] City of Riverbank, 2009. City of Riverbank General Plan 2005-2025. Adopted April 22, 2009.

TABLE 4.3-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AIR QUALITY**

Goal/Policy Number	Goal/Policy Content
Goal AIR-1	**Create and enhance development patterns that encourage people to walk, bicycle, or use public transit for a significant number of their daily trips.**
Policy AIR-1.2	Approved plans, subdivisions, and projects shall provide highly-connected circulation networks that accommodate safe, direct, and convenient alternatives to vehicular travel.
Policy AIR-1.7	New major activity centers, office, and commercial development shall accommodate alternatives to automobile access, including provision of secure bicycle storage and parking facilities.
Policy AIR-1.10	Projects or portions of projects that implement a fine-grained mixing[a] of housing types and land uses, and that include other pedestrian, bicycle, and transit oriented design elements, which generate fewer vehicle trips, will have a correspondingly lower contribution towards any roadway or intersection improvement mitigation measures required in City environmental documents and conditions or approval.
Goal AIR-2	**Construction practices and materials used in Riverbank minimize direct and indirect air pollutant emissions.**
Policy AIR-2.1	The City of Riverbank, in coordination with the San Joaquin Valley Air Pollution Control District, will require approved projects, plans, and subdivisions to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
Policy AIR-2.2	The City of Riverbank will require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate and reactive organic gas emissions and are appropriate to the scale and intensity of use.
Policy AIR-2.5	The City of Riverbank will require new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption.
Goal AIR-3	**Avoid land use incompatibility that causes local exposure to harmful and hazardous air pollutants.**
Policy AIR-3.1	The City will provide adequate sites for industrial development, while minimizing the health risks to people resulting from industrial toxic or hazardous air pollutant emissions.

TABLE 4.3-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO AIR QUALITY** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy AIR-3.3	The City of Riverbank will ensure that industrial, manufacturing, and processing facilities that may produce toxic or hazardous air pollutants are located at an adequate distance from residential areas and other sensitive receptors.

[a] The term "grain" can be used to describe the degree to which land uses are mixed and the size of development blocks. "Fine grain" development involves land uses located in proximity with one another on relatively smaller parcel or development blocks, allowing residents and employees to walk or bicycle among different destinations to meet their daily or occasional needs without use of a private automobile. By contrast, "coarse grain" development involves land uses that isolated from one another, with non-residential land uses typically occurring on larger parcels. This presents a situation in which residents and employees have a more difficult time traveling among destinations except by automobile. Public transit service is less feasible because transit routes would be located at a significant distance form potential transit users.

standards are designated "attainment" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards within an air basin, it is designated "nonattainment" for that pollutant. US EPA designates areas as "unclassified" when insufficient data are available to determine the attainment status; however, these areas are typically considered to be in attainment of the standard.

C. Existing Conditions

Air quality is affected by the rate of pollutant emissions and by meteorological conditions such as wind speed, atmospheric stability, and mixing height, all of which affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while short-term variations result from changes in atmospheric conditions.

The Specific Plan Area is bordered by farmland to the north and east, Claribel Road the south, and Claus Road to the west. "Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the

TABLE 4.3-2 **AMBIENT AIR QUALITY STANDARDS – FEBRUARY 2012**[a]

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[9]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[9]	—	
Lead[10,11]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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TABLE 4.3-2 **AMBIENT AIR QUALITY STANDARDS – FEBRUARY, 2012** (CONTINUED)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

9. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

   Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[a] California Air Resources Board (CARB), 2012. Available: http://www.arb.ca.gov. Accessed February 27, 2012.

elderly, the acutely ill and the chronically ill, are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. Sensitive receptors in the project vicinity include residences located across Claus Road on the northern half of the site.

a. Existing Air Pollutant Levels

As previously discussed, the San Joaquin Valley experiences poor air quality conditions, due primarily to elevated levels of ozone and particulate matter. CARB, in cooperation with SJVAPCD, monitors air quality throughout the San Joaquin Valley Air Basin. The closest official monitoring station to Riverbank is located in Modesto on 14th Street.

Table 4.3-3 summarizes air quality monitoring data from the Modesto monitoring station. The values in the table reflect the highest air pollutant levels measured from 2008 to 2010. In addition, Table 4.3-4 provides the number of days in which measured concentrations exceeded the NAAQS or CAAQS. These findings are discussed in greater detail below.

i. Criteria Air Pollutants in Riverbank

As indicated in Table 4.3-4, the NAAQS and CAAQS for one- and eight-hour ozone, and $PM_{2.5}$ were exceeded multiple times in Modesto over the last three years. The CAAQS 24-hour standard for PM_{10} was exceeded 7 times in 2008, 6 times in 2009, and once in 2010. The highest carbon monoxide concentrations measured in Modesto have been well below the national and State ambient standards. However, since automobile emissions are the primary source of carbon monoxide, the highest concentrations would typically be found away from monitoring stations, near congested roadways that carry large volumes of traffic. These are referred to as "hot spots." Other criteria pollutants, such as nitrogen dioxide, sulfur dioxide, and lead, are typically found at low levels at the Modesto monitoring station, and should not pose a major air pollution concern in Riverbank.

TABLE 4.3-3 **HIGHEST MEASURED AIR POLLUTANT CONCENTRATIONS**

Pollutant	Average Time Measured	Air Pollutant Levels 2008	2009	2010
O_3	1-Hour	*0.127 ppm*	*0.112 ppm*	*0.105 ppm*
	8-Hour	*0.107 ppm*	*0.098 ppm*	*0.081 ppm*
CO	8-Hour	1.94 ppm	2.41 ppm	1.78 ppm
NO_2[a]	1-Hour	0.063 ppm	0.058 ppm	0.05 ppm
	Annual	0.012 ppm	0.012 ppm	0.01 ppm
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	*107.2 ug/m³*	*61.5 ug/m³*	*44.7 ug/m³*
	Annual	*16 ug/m³*	*13 ug/m³*	*12.2 ug/m³*
Respirable Particulate Matter (PM_{10})	24-Hour	*111.1 ug/m³*	*68.2 ug/m³*	*58.9 ug/m³*
	Annual	*31.3 ug/m³*	*26.6 ug/m³*	*22.1 ug/m³*

Notes: ppm = parts per million ug/m³ = micrograms per cubic meter. Values reported in ***bold italic*** exceed ambient air quality standard.
[a] Data reported from Turlock – South Minaret Street monitoring location.
Source: CARB, 2012.

TABLE 4.3-4 **SUMMARY OF MEASURED AIR QUALITY EXCEEDANCES**

Pollutant	Standard	Days Exceeding Standard 2008	2009	2010
O_3	NAAQS 1-hr	NA	NA	NA
	NAAQS 8-hr	18	7	3
	CAAQS 1-hr	10	1	1
	CAAQS 8-hr	24	14	9
$PM_{2.5}$	NAAQS 24-hr	13	8	10
PM_{10}	NAAQS 24-hr	0	0	0
	CAAQS 24-hr	7	6	1
All Other (CO, NO_2, Lead, SO_2)	All Other	0	0	0

Notes: NA = Not applicable.
Source: Illingworth & Rodkin, 2012.

b. Attainment Status

Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard. The San Joaquin Valley as a whole does not meet State or federal ambient air quality standards for ground level ozone and $PM_{2.5}$. The Valley is classified as attainment under the federal standards for PM_{10}, however, it is classified as nonattainment under the more stringent State standard. The attainment status for the Valley with respect to various pollutants of concern is displayed in Table 4.3-5.

i. Air Quality Planning

In response to not meeting the NAAQS, the region is required to submit attainment plans to US EPA through the State, which are referred to as State Implementation Plans (SIP). The region submitted the 2004 Extreme Ozone Attainment Demonstration Plan to EPA in 2004, which addressed the old 1-hour national standard. The region's 2007 Ozone Plan, addressing the 8-hour ozone NAAQS, was submitted to US EPA and approved in March 2012. That plan predicts attainment of the standard throughout 90 percent of the district by 2020 and the entire district by 2024. To accomplish these goals, the plan would reduce NOx emissions further by 75 percent and ROG emissions by 25 percent. Among a wide variety of control measures included in these plans, the ones relevant to the Specific Plan include: Indirect Source Mitigation Programs; Energy Conservation Programs; Employer-Based Trip Reduction Programs; and Green Contracting Programs. In particular, Green Contracting Programs encourage use of low-emission vehicles, equipment and clean fuels to reduce or offset emissions from construction and traffic associated with land use developments.

On October 30, 2006, EPA issued a Final Rule determining that the San Joaquin Valley had attained the NAAQS for PM_{10} [71 FR 63642]. In response, SJVAPCD, CARB, and the Valley's local Metropolitan Planning Organizations (MPOs) have developed the 2007 PM_{10} Maintenance Plan and

TABLE 4.3-5 **PROJECT AREA ATTAINMENT STATUS**

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	No Federal Standard	Severe Nonattainment
Ozone (O_3) – 8-Hour Standard	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment-Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)[a]	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment-Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates and Lead	No Designation	Attainment
Hydrogen Sulfide	No Designation	Unclassified
Visibility Reducing Particles	No Designation	Unclassified

[a] The Valley is designated nonattainment for the 1997 federal $PM_{2.5}$ standards. EPA released final designations for the 2006 $PM_{2.5}$ standards (effective in 2009), designating the Valley as nonattainment.
Source: Illingworth & Rodkin, 2012.

Request for Redesignation so that EPA can proceed with completing the redesignation process for PM_{10} for the Valley. In 2008, US EPA proposed to approve the 2007 PM_{10} Maintenance Plan and Request for Redesignation and the region now meets the NAAQS for PM_{10}.

The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. The plan was approved by CARB on May 22, 2008 and US EPA on November 9, 2011. This plan will assure that the Valley will attain the 1997 $PM_{2.5}$ standard and make progress toward attaining the new 2006 standards as well as the state standard. The plan uses control measures to reduce NOx, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures

to reduce direct emissions of $PM_{2.5}$, including a strengthening of the wood-burning rules. Recent and proposed action by CARB to reduce diesel particulate matter emissions from on- and off-road mobiles sources is contained in the plan. Attainment plans for the 2006 $PM_{2.5}$ NAAQS are not required until December 2012.

Both the ozone and $PM_{2.5}$ plans include all measures (i.e. federal, state, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. TCMs are strategies meant to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. The plans described above addressing ozone also meet the state planning requirements.

D. Standards of Significance

1. CEQA Appendix G Standards

The Plan would have a significant effect on the environment with respect to air quality if it would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

c. Result in a cumulatively considerable net increase of any nonattainment pollutant.

d. Expose sensitive receptors to substantial pollutant concentrations.

e. Create objectionable odors affecting a substantial number of people.

2. Thresholds of Significance

The SJVAPCD has developed the Guide for Assessing and Mitigating Air Quality Impacts, also known as the GAMAQI.[6] The following thresholds of significance, obtained from the SJVAPCD's GAMAQI, are used to determine whether a proposed project would result in a significant air quality impact:

- **Construction Emissions of Particulate Matter (PM).** SJVAPCD recommends a qualitative evaluation of construction PM_{10} emissions that focuses on implementation of effective and comprehensive control measures. Construction impacts associated with a proposed project would be considered significant if the feasible control measures for construction are not included in the project. Construction projects are required to comply with Regulation VIII as listed in the SJVAPCD; however, the size of the project and the proximity to sensitive receptors may warrant additional measures.
- **Emissions of Ozone Precursors (ROG and NOx).** Direct and indirect emissions associated with a proposed project would be considered significant if a project generates emissions of ROG or NOx that exceed 10 tons per year. SJVAPCD has not published thresholds for long-term emissions of Particulate Matter (PM). However, a PM_{10} emission level of 15 tons per year was used for this assessment,[7] since this is the level at which SJVAPCD requires "offsets" for new stationary sources. Since $PM_{2.5}$ am-

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[6] SJVAPCD, 1998. *Guide for Assessing and Mitigating Air Quality Impacts.* Revised January 10, 2002.

[7] While San Joaquin Valley Air Pollution Control District CEQA guidance recognizes that particulate matter (PM_{10} and $PM_{2.5}$) is a major air quality issue in the basin, it has to date not established numerical thresholds for significance for these pollutants. For the purposes of this analysis, a PM_{10} emission threshold of 15 tons per year was used as a measure of significance. This emission is the SJVAPCD threshold level at which new stationary sources requiring permits from the District must provide emissions "offsets." This threshold of significance for PM_{10} is consistent with the District's ROG and NOx thresholds, which are also the offset thresholds established in SJVAPCD Rule 2201 New and Modified Stationary Source Review Rule.

bient air quality standards are about 30 percent below the PM_{10} standard, a threshold of 10 tons per year for $PM_{2.5}$ was used.[8]

- **Local CO Concentrations.** Traffic emissions associated with the proposed project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the ambient air quality standards (i.e. CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour).
- **Toxic Air Contaminants or Hazardous Air Pollutants.** Exposure to hazardous air pollutants (HAPs) or toxic air contaminants (TACs) would be considered significant if the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million or would result in a Hazard Index greater than one for non-cancer health effects.
- **Odors.** Odor impacts associated with the proposed project would be considered significant if the project has the potential to frequently expose members of the public to objectionable odors through development of a new odor source or placement of receptors near an existing odor source.

SJVAPCD CEQA guidance does not require quantitative analysis of construction fugitive dust emissions. The Air District's Guide for Assessing and Mitigating Air Quality Impacts states: "PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult" (page 29). The SJVAPCD's approach to CEQA analyses of construction PM_{10} impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions. The SJVAPCD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The SJVAPCD guidelines provide feasible control measures for construction emission of PM_{10} as specified in its Regulation VIII. The SJVAPCD has determined that implementation of the measures specified in Regulation VIII, along with additional or enhanced measures

[8] The Federal 24-hour standard for $PM_{2.5}$ (35 $\mu g/m^3$) is approximately 30 percent lower than the State 24-hour standard for PM_{10} (35 $\mu g/m^3$).

which may be appropriate for particular projects, will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less-than-significant.

With respect to cumulative air quality impacts, Section 4.3.2 of the GAMAQI provides that any proposed project that would individually have a significant air quality impact (i.e. exceed significance thresholds for ROG, NOx, or PM_{10}) would also be considered to have a significant cumulative impact. Although the GAMAQI does not provide guidance for evaluating cumulative air quality impacts in instances where project-specific emissions of criteria pollutants do not exceed the Air District's significance thresholds, it does state: "[a]ll but the largest individual sources emit ROG and NOx in amounts too small to have a measurable effect on ambient ozone concentrations by themselves." In addition, the CEQA guidance provided by the Bay Area Air Quality Management District (BAAQMD) does address this condition, in both the District's previous guidance document and in its recently updated guidance document. In the absence of guidance on this matter from the SJVAPCD, the current BAAQMD guidance document was therefore considered in establishing a threshold of significance for cumulative ozone emissions for purposes of this analysis, as follows. The recently updated BAAQMD CEQA Guidelines (updated May, 2011) states: "[n]o single project would be sufficient in size, by itself, to result in non-attainment of regional air quality standards. Consequently, the thresholds of significance discussed above (for individual project impacts) are the amount of pollution that is deemed cumulatively considerable and, therefore, a significant adverse impact." Based on the above, for purposes of this analysis, a project is considered to result in a cumulatively considerable air quality impact if the project emissions exceed the SJVAPCD significance thresholds for criteria pollutants/ozone precursors (ROG, NOx, or PM_{10}), or the project is not consistent with the regional clean air plan.

E. Impacts Discussion

1. Plan Impacts

This section describes the impacts of the Specific Plan.

a. Conflict with or obstruct implementation of the applicable air quality plan.

i. Applicable Clean Air Plans

As described in Section C.b.i above, a wide variety of control measures are included in the 2004 extreme Ozone Attainment Demonstration and 2007 Ozone Plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments.

As previously noted, both the ozone and $PM_{2.5}$ plans include all measures (i.e. federal, state, and local) that would be implemented through rule making or program funding to reduce air pollutant emissions. Transportation Control Measures (TCMs) are part of these plans. The plans described above in Section C.b.i, addressing ozone also meet the state planning requirements.

The Draft Specific Plan includes goals and policies intended to reduce the rate of vehicle trips or VMT associated with implementation of the Plan land uses (see Table 4.3-6).

ii. Consistency with Applicable Air Quality Plans

The GAMAQI does not include methodologies for assessing the effect of a project on consistency with clean air plans developed by the SJVAPCD. Regional clean air plans developed by SJVAPCD rely on local land use designations to develop population and travel projections that are the basis of future emissions inventories. Air pollution control plans are aimed at reducing these projected future emissions. As discussed in Section 4.13, *Population and Housing*, it is anticipated that buildout of the Plan would result in the creation of between 827 and 1,654 new jobs over the course of 15 years. The increase in industrial and commercial/office square footage anticipated with buildout of the Plan is generally consistent with growth projections assumed in the Riverbank General Plan for the same time horizon. The General Plan projects the construction of approximately 1,999,540 square feet of space in industrial business parks, which would be concentrated largely along the railroad lines and in the southeastern portion of the city, including on the RAAP Main Site. The General Plan also projects construction of roughly 678,980 square feet of net new commercial/retail space on the northern portion of the

TABLE 4.3-6 **RIVERBANK SPECIFIC PLAN POLICIES RELATED TO AIR QUALITY**

Goal/Policy Number	Goal/Policy Content
Goal LUD-1	**A land use mix that contributes to job creation for Riverbank residents.**
Policy LUD-1	Encourage a mix of new employment-intensive development types on undeveloped portions of the RAAP, including traditional industrial uses, R&D space, flex space, office uses, and supporting retail space.
Goal TRAN-1	**A new industrial park and retail area that facilitates the safe circulation of vehicles, bicycles, and pedestrians.**
Policy TRAN-1	Provide pedestrian crossings as appropriate to ensure that employees can safely walk between buildings and to areas off-site.
Policy TRAN-2	On new public streets built in the Specific Plan Area, use a landscaped planting strip to buffer sidewalks from roadways.
Policy TRAN-3	Ensure bicycles are accommodated through the provision of on-site bicycle parking.
Policy TRAN-4	Design roadways to accommodate all modes of travel safely.
Goal TRAN-3	**An industrial park that provides for safe queuing of delivery vehicles.**
Policy TRAN-8	Ensure that truck deliveries and movement do not inhibit pedestrian, bicycle, and vehicular circulation.

RAAP Main Site and along Claribel Road on either side of Oakdale Road. Additionally, growth under the proposed Plan would come incrementally over a period of 20 years and would be dependent on market conditions. As such, the proposed Plan would not result in a substantial and unplanned level of growth and associated air quality impacts would therefore be consistent with population and vehicle related emissions projections contained in regional clean air planning efforts, and would not conflict with achievement of the control plans aimed at reducing these projected emissions. Therefore, the project would not conflict with or obstruct implementation of efforts outlined in the region's air pollution control plans to attain or maintain ambient air quality standards. This would be a *less-than-significant* impact.

b. Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation

i. Construction Emissions

Construction activities would temporarily affect local air quality, causing a temporary increase in particulate dust and other criteria pollutants. Dust emissions during periods of demolition and construction would increase particulate concentrations at neighboring properties, and emissions from construction equipment exhaust, and worker and vendor vehicle trips would increase pollutant concentrations locally and regionally. This impact is potentially significant, but normally mitigable.

Construction of the Plan Area would occur over the course of an approximate 20-year period. The North End and South End Cap areas have minimal planned demolition, while other existing areas would have varying degrees of demolition. Factors that will determine demolition or reuse include the quality of existing buildings, utilities, and security issues, economic feasibility in meeting seismic requirements, and flexibility for reuse.

The SJVAPCD Indirect Source Review Rule (Rule 9510) applies to construction of the proposed Projects and not specific plans. In accordance with Rule 9510, a detailed air impact assessment would have to be prepared for project components. It is likely that the plan would be constructed as separate projects, in terms of obtaining final grading plans and other discretionary approvals from local agencies. SJVAPCD would calculate the construction and operational emissions from each development phase submitted. Rule 9510 would require that the project reduce construction exhaust emissions by 20 percent for NOx and 45 percent for PM_{10} from the statewide average as estimated by the ARB. The basis for the reductions is use of URBEMIS2007 emissions for statewide construction fleets. Use of newer equipment could result in substantially lower emissions. SJVAPCD encourages reductions through on-site mitigation measures. Fees to purchase or sponsor off-site reductions through SJVAPCD apply when on-site mitigation measures do not achieve the requirements. Using less-polluting construction equipment, such as newer equipment or retrofitting older equipment reduces construction emissions on-site. A combination of on-site and off-site measures can be im-

plemented to meet the overall emission reduction requirements. Based on the findings of the air impact assessment, the project would pay to the SJVAPCD a fee necessary to offset the required construction emissions not reduced by on-site measures identified in the permit application submitted to the District. Offset fees would be calculated in accordance with the procedures identified in the Rule 9510 and approved by the SJVAPCD. This rule would not directly affect ROG emissions.

At this time, specific construction plans, schedules, and phasing related to the Specific Plan are not available and quantification of emissions from construction activities would be speculative. If one were to assume full reconstruction of the site over a 1- to 5-year period, then emissions of ozone precursor pollutants (i.e. ROG and NOx) would likely exceed the GAMAQI significance thresholds. Future projects within the Plan Area will be analyzed on an individual basis and mitigated (in accordance with Rule 9510), as necessary. Because it is not possible to quantify a construction emissions estimate for the Specific Plan, this impact is considered *significant.*

ii. Operational Emissions

Criteria air pollutant emissions associated with the development and operation of the Specific Plan were computed. This includes the computation of emissions from traffic (mobile sources), area sources (e.g. maintenance architectural coatings), and natural gas consumption. These emissions were computed using the California Emissions Estimator Model Version 2011.1.1 (CalEEMod), as recommended by SJVAPCD.

CalEEMod is a computer model developed by the South Coast Air Quality Management District (SCAQMD) to estimate air pollutant and GHG emissions from land use development projects. The model is an update to the URBEMIS2007 model and uses the latest statewide emission inventory models for mobiles sources (i.e. EMFAC2007). The model is periodically updated to reflect most recent emissions estimates for source types and incorporate accuracies in estimating emission from land use activities. The latest version of this model (i.e. Version 2011.1.1) was used in this analysis.

Trip generation rates produced by Fehr & Peers were input to CalEEMod. The trip generation estimates include reductions for pass-by trips for retail uses, which trips are made by traffic already using the adjacent roadway that enter the site as an intermediate stop on the way from another destination. They do not involve an extra vehicle trip. The methodology for developing the trip estimates is described in the Fehr & Peers report.[9] Trip generation represents the daily number of trips generated when the land uses are fully operational. Pass-by trips are subtracted from the proposed Retail land uses. The adjusted trip rates were entered into CalEEMod, such that CalEEMod computed the same total number of daily trips generated as the Fehr & Peers study.

It is assumed that development of the Plan Area would occur over the course of a 20-year period; however, the rate and timeframe are subject to variation based on market demands, the regional economy, and other socioeconomic factors. The fully built-out plan operational emissions estimates were computed for the year 2030. Existing (2010 baseline) operational emissions were also computed and subtracted from 2030 emissions to determine the relative net contribution of implementation of the Specific Plan. Specific Plan operational period emissions estimates are presented in Table 4.3-7 and CalEEMod output worksheets are included in Appendix B.

Currently, there are no specific development projects proposed within the Specific Plan Area. Future projects would be subject to SJVAPCD's Indirect Source Review or Rule 9510 (ISR) to reduce NOx and PM_{10} emissions. Under Rule 9510, future projects would be required to reduce operational NOx emissions by 33 percent and operational PM_{10} emissions by 50 percent of the project's operational baseline emissions over 10 years. The actual required reductions would be determined by SJVAPCD when an application is submitted prior to "the last discretionary approval" for the proposed project.

[9] Fehr & Peers, 2011. *Administrative Draft Transportation Impact Analysis Riverbank Army Ammunition Plant.* December.

TABLE 4.3-7 **SPECIFIC PLAN OPERATIONAL PERIOD EMISSIONS**

Scenario	ROG (Tons/ Year)	NOx (Tons/ Year)	PM_{10} (Tons/ Year)	$PM_{2.5}$ (Tons/ Year)
Existing Annual Emissions	4.98	5.95	1.50	0.26
2030 Annual Emissions	14.31	21.19	14.39	0.94
2030 Net Annual Emissions	9.33	15.24	12.89	0.68
SJVAPCD Thresholds	10	10	15	10
Significant	No	Yes	No	No

Source: Illingworth & Rodkin, 2012.

However, the methods used by SJVAPCD to determine the required mitigations are consistent with the methods used in this analysis (e.g. use of latest URBEMIS model using project size and trip generation rates). The mitigation measures required by ISR for this project would be determined at the time that final development plans are developed.

The emission projections shown in Table 4.3-7 do not reflect the reduction that would be required under ISR. Emissions of NOx and to some extent ROG emissions would be reduced with the required ISR mitigation. Unmitigated operational NOx emissions would have to be reduced by almost 35 percent from the project's operational baseline emissions to meet the SJVAPCD thresholds. The project ROG emissions with application of Rule 9510 are predicted to remain be below the SJVAPCD thresholds. ISR only requires offsets to be effective for 10 years. Project emissions predicted for 2030 show that NOx emissions would be above the SJVAPCD thresholds.

As shown in Table 4.3-7, PM_{10} emissions would not exceed the emissions threshold of 15 tons per year. Like NOx emissions, these would also be subject to ISR. Unmitigated operational PM_{10} emissions would have to be re-

duced by 50 percent of the project's operational baseline emissions by on-site, off-site, or some combination of on- and off-site mitigation. The actual reductions incorporated into the proposed project would not be determined until the proposed project finalizes an Air Impact Assessment application. However, as indicated in Table 4.3-7, the projects submitted under the Specific Plan would have PM_{10} emissions below the SJVAPCD significance thresholds with or without the ISR emissions reduction of 50 percent.

Overall, as indicated in Table 4.3-7, operational period emissions are estimated to exceed project-level significance thresholds for NOx under the 2030 future cases. Therefore, this impact is considered *significant.*

iii. Carbon Monoxide Hot Spots

Monitoring data from all ambient air quality monitoring stations in the San Joaquin Valley indicate that existing carbon monoxide levels are currently below national and California ambient air quality standards. The San Joaquin Valley has been designated as an attainment area for the CO standards. The highest measured level in Modesto (the closest monitoring stations to the Plan Area) during the past three years was 2.4 ppm for the eight-hour averaging periods.

Even though current CO levels in the San Joaquin Valley are well below ambient air quality standards, elevated levels of CO still warrant analysis. CO hotspots (occurrences of localized high CO concentrations) could still occur near busy congested intersections. Recognizing the relatively low CO concentrations experienced in the San Joaquin Valley, the GAMAQI states that a project would have a less-than-significant impact if the following criteria would not be met:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

According to the traffic report, no streets or intersections would operate at LOS E or F with traffic mitigation incorporated. Since no streets or intersections affected by the project would have LOS E or F, the impact of the project related to localized CO concentrations would therefore be *less than significant.*

c. Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant

As described above section D.1.b.i, Construction Emissions, and below in Impact AQ-2 in Section E, Impacts and Mitigation Measures, future projects in the Plan Area have the potential to result in a cumulatively considerable net increase of construction period and operational period criteria pollutants and these impacts are considered *significant.* Implementation of Mitigation Measures AQ-1 and AQ-2 above would reduce this impact, but not to a level of less than significant. Therefore, the impact is considered *significant and unavoidable.*

d. Expose Sensitive Receptors to Substantial Pollutant Concentrations *(LTS)*

The health risk evaluation for the Specific Plan involved the calculation of future diesel particulate matter (DPM) emissions and associated health risks for traffic on Claus Road, which is the main road adjacent to the project site. Emissions were calculated using the latest version of the CARB EMFAC2011 emissions model. Potential cancer risks for residents along Claus Road were calculated using health risk assessment methods recommended by the California Office of Environmental Health Hazard Assessment[10] (OEHHA) and the SJVAPCD[11]. The health risk assessment method includes calculation of ambient DPM concentrations at residential receptor locations using an air quality dispersion model, and then calculating cancer risks using

[10] OEHHA 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment.

[11] San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling,* Draft 01/07 Rev 2.0.

the modeled concentrations along with appropriate DPM-specific risk factors.

Roadway and receptor coordinates, meteorological data, traffic volumes, and the emission factors were used with the AERMOD air quality dispersion model to predict annual DPM concentrations from roadway traffic which were then used to calculate lifetime cancer risks at the residential receptor locations.

i. Traffic Emissions

DPM emissions for traffic on Claus Road were calculated using emission factors from the CARB EMFAC2011 emissions model with default information for Stanislaus County along with future traffic volumes and vehicle mixes on Claus Road. EMFAC2011 is the most recent version of the CARB motor vehicle emission factor model. Emission factors were developed for the year 2020 using the projected mix of cars and trucks traveling on Claus Road north and south of the project site. Based on traffic data for the project there would be more traffic on Claus Road north of the site than south of the site. The average daily traffic volumes were estimated as 4,957 passenger vehicles and 428 trucks, or 54 percent of the total traffic, traveling north of the project site on Claus Road, and 4,223 passenger vehicles and 428 trucks, or 46 percent of the total traffic, traveling on Claus Road south of the site. In calculating emissions it was assumed that all trucks would be heavy duty trucks and the passenger vehicles would be comprised of light duty autos and trucks. An average travel speed of 45 mph (the posted speed limit on Claus Road) was assumed for all vehicles and used with the EMFAC2011 model in calculating DPM emission factors. These emissions were then used in the air quality dispersion modeling of vehicles traveling on Claus Road to predict DPM concentrations at residences along the roadway. The DPM emission factor calculations are shown in Appendix B.

ii. Roadway Dispersion Modeling

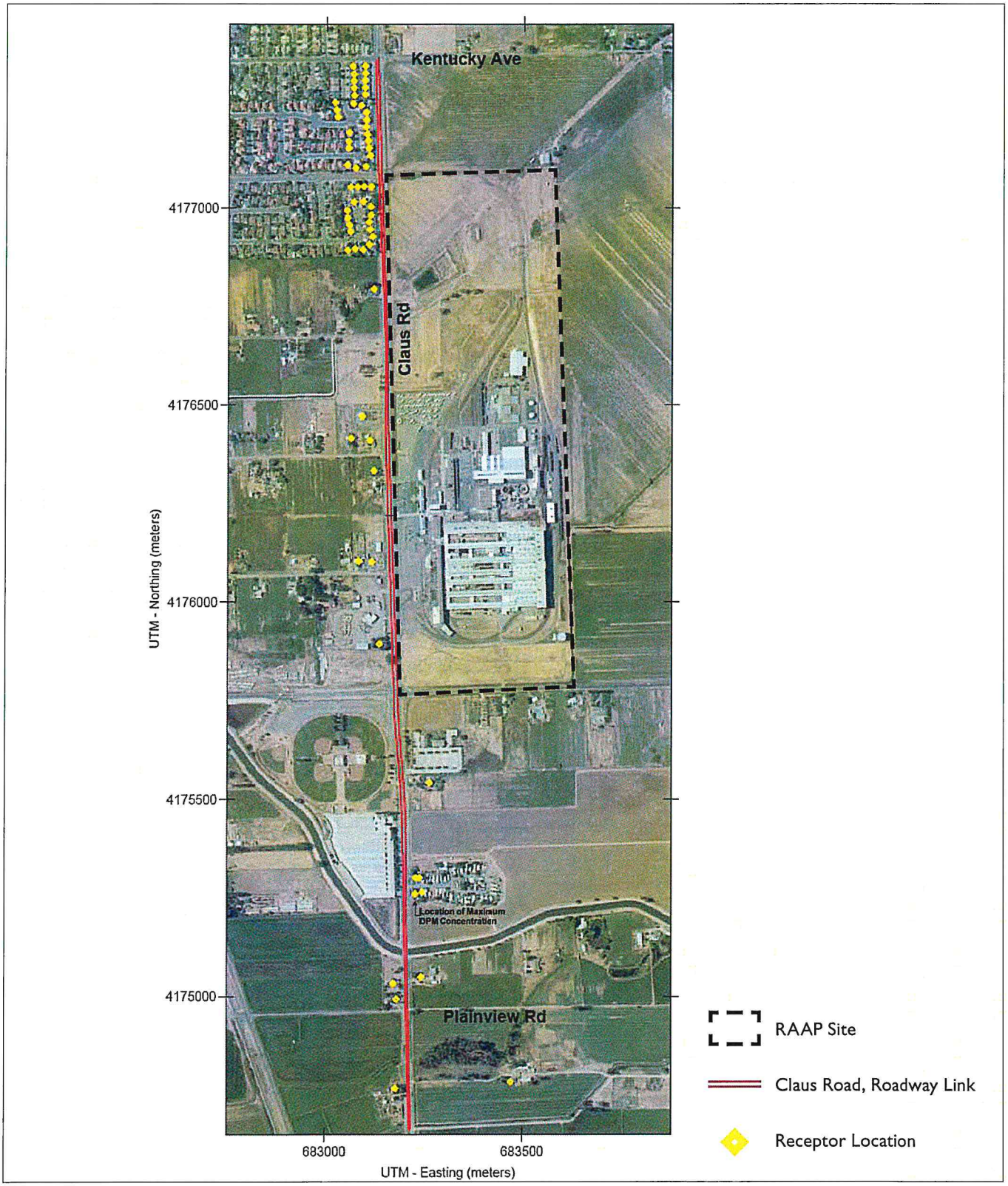
Dispersion modeling of roadway DPM emissions was conducted using the EPA's AERMOD dispersion model. This model is recommended by the

SJVAPCD for this type of analysis. The AERMOD model predicts pollutant concentrations at receptors located in areas of flat or complex terrain from a variety of emission source types including point, area, volume, and line sources. Emissions from these source types can be continuous or vary by hour, day of the week, month, or season. For this analysis the model was run using regulatory default dispersion options and rural dispersion coefficients due to the rural nature of the project area. Since there is little variation in terrain elevations in the project area, the model was run in flat terrain mode. A 5-year set of hourly meteorological data (2005 - 2009), prepared by the SJVAPCD,[12] from the Modesto Airport, located about 6.25 miles south-southwest of the project site, was used in the modeling. Other inputs to the model included road geometry, receptor locations, and hourly emission rates. Vehicle emissions were modeled as line sources (a series of volume sources along a path) along Claus Road. In the vicinity of the project site, Claus Road is a two-lane road and was modeled using one line source per travel direction. Since the traffic volumes and associated emissions on Claus Road are different north and south of the project site, two roadway segments were used in the modeling. One road segment represents traffic from the project site north on Claus Road to Kentucky Avenue and the other segment represents Claus Road from of the project site south to just beyond Plainview Road. Emission source parameters used in modeling these line sources were consistent with SJVAPCD Air Quality Modeling Guidance13.

Locations of residential receptors along Claus Road were identified from aerial images and included in the modeling as locations for the model to calculate annual average DPM concentrations. Sixty-five residential receptors were identified and included in the modeling. An aerial view showing the project site, roadway segments modeled, and the locations of the residential receptors is provided in Figure 4.3-1. The maximum-modeled DPM concentration occurred along the road segment south of the project site, north of Plainview

[12] http://www.valleyair.org/busind/pto/Tox_Resources/AirQuality Monitoring.htm.

[13] San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling*, Draft 01/07 Rev 2.0.



Source: Illingworth_&_Rodkin, 2012.

FIGURE 4.3-1

PROJECT SITE, ROADWAY LINKS FOR DISPERSION MODELING, AND RECEPTOR LOCATIONS

Road, at UTM coordinates 683,228.5 meters east, 4,175260.6 meters north and is shown in Figure 4.3-1. Inputs used for the modeling are included in Appendix B.

iii. Cancer Risk Prediction

Cancer risk to residents near Claus Road from roadway DPM emissions were assessed following the SJVAPCD recommended methods and their significance evaluated based on the SJVAPCD threshold of an incremental cancer risk of ten excess cases per million at the Maximally Exposed Individual (MEI). Exceeding this threshold would result in a significant impact. The ten-in-one-million risk level is also used by the Air Toxics "Hot Spots" (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources.

Potential cancer risks from inhalation of toxic air contaminants are calculated based on the annual average concentration, an inhalation dose, and the cancer potency of the toxic air contaminant. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on whether the exposure is considered to occur for a residential location, at a workplace, or at a school. For this analysis, potential exposures to DPM concentrations from traffic on Claus Road to residents along the roadway were evaluated. For residential exposures, the SJVAPCD recommends using a breathing rate of 393 liters per day per kilogram of body weight (L/kg-day). Residential receptors are assumed to be exposed for 24 hours per day for 350 days per year over a 70-year lifetime.

Potential health risks to residents along Claus Road from roadway DPM emissions were evaluated assuming constant exposure to DPM concentrations based on emissions during 2020 for an entire 70-year lifetime exposure period (SJVAPCD recommended method). The maximum increased MEI cancer risk for a 70-year exposure was 6.5 in a million. Details on the cancer risk calculations are included in Appendix B.

Under the GAMAQI, an incremental risk of greater than ten cases per million at the MEI would be considered a significant impact. The increased cancer risk associated with traffic along Claus Road is less than 10 in a million, and therefore would be a *less-than-significant* impact.

e. Create Objectionable Odors *(LTS)*

Odors are assessed based on the potential of the Plan to result in odor complaints. This could result from the Plan creating development that produces objectionable odors or places people near sources of objectionable odors.

Significant odor sources are not currently located within the Plan Area; therefore, new uses are not likely to be affected by existing odor sources. The Plan Area could include new restaurants, which can be a source of odor complaints. However, the Specific Plan would not site new restaurants directly adjacent to existing residences, so odor complaints are unlikely. Therefore, this impact is considered *less than significant.*

2. Cumulative Impacts

The proposed Plan would not contribute to a regional impact by increasing the rate of vehicle use at a greater rate than population growth. However, build out of the Specific Plan with mitigation may have NOx emissions that could exceed the GAMAQI thresholds. That would mean the project could have a cumulatively considerable increase in air pollutant emissions that may contribute to future violations of ozone ambient air quality standards. As a result, this cumulative impact would be considered *significant.*

F. Impacts and Mitigation Measures

Impact AQ-1: Construction of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to an existing or projected air quality violation. Because of the project size and the uncertainty of the construction schedule, construction period emissions would be considered to remain significant with mitigation.

Mitigation Measure AQ-1a: Each individual project component of the Specific Plan shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1b through AQ-1e.

Mitigation Measure AQ-1b: SJVAPCD Regulation VIII Control Measures. The following controls shall be required to be implemented at all construction sites:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover;
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant;
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking;
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition;
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained;
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded*

or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden);

- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant;
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Mitigation Measure AQ-1c: Enhanced Control Measures. The following measures should be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):

- Limit traffic speeds on unpaved roads to 15 mph; and
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

Mitigation Measure AQ-1d: Additional Control Measures. The following control measures are strongly encouraged by the SJVAPCD at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions:

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- Install wind breaks at windward side(s) of construction areas;
- Suspend excavation and grading activity when wind exceeds 20 mph *(Regardless of wind speed, and owner/operator must comply with Regulation VIII's 20 percent opacity limitation.)*; and

- Limit area subject to excavation, grading, and other construction activity at any one time.

Mitigation Measure AQ-1e: The following measures may be implemented to mitigate emissions from construction equipment exhaust:

- Use of alternative-fueled or catalyst-equipped diesel construction equipment;
- Minimize idling time (e.g. 5-minute maximum);
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use;
- Replace fossil-fueled equipment with electrically-driven equivalents (provided they are not run via a portable generator set);
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; and
- Implement activity management (e.g. rescheduling activities to reduce short-term impacts).

Significance after Mitigation. Fugitive dust emissions would be less than significant with adherence to SJVAPCD Regulation VIII requirements and Mitigation Measures AQ-1a through AQ-1d. There is no certainty that mitigated exhaust emissions would be less than the GAMAQI significance threshold with SJVAPCD Rule 9510 and Mitigation Measures AQ-1a through 1d. The potential to exceed these thresholds with mitigation in place is mostly dependent on the type of construction and the amount of construction that occurs in one year. These are likely to be dependent on future market conditions. The impact, therefore, would be considered *significant and unavoidable.*

Impact AQ-2: Operation of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to existing or projected air quality violations.

Mitigation Measure AQ-2: Each individual project component of the Specific Plan shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g. improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs.

Significance after Mitigation. Individual projects would have emissions that would be lower than the total emissions predicted for the Specific Plan. However, large projects that become operation in the early phases could have emissions that exceed the GAMQI thresholds. It is likely that application of SJVAPCD Rule 9510 would reduce these emissions to less than significant. However, it cannot be certain that those emissions would be reduced accordingly until project plans and schedules are identified and included as part of future project Air Impact Assessments performed in accordance with Rule 9510. The impact, therefore, would be considered s*ignificant and unavoidable*.

4.4 BIOLOGICAL RESOURCES

This chapter discusses the existing biological resources in and around the Plan Area and evaluates the potential biological resource impacts associated with the Draft RAAP Specific Plan. The following evaluation assesses special-status species, sensitive biological communities, wetlands, migratory species, and policies and plans intended to protect biological resources.

A. Regulatory Framework

This section summarizes key federal, State, regional and city regulations, and plans and programs that provide protection and management of sensitive biological resources within and around the Plan Area.

1. Federal Regulations

The federal laws that regulate the treatment of biological resources include the Endangered Species Act, the Migratory Bird Treaty Act, and the Clean Water Act. The following sections outline the relevant principles of each.

a. Federal Endangered Species Act

The US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) are responsible for implementation of the federal Endangered Species Act (ESA). The Act protects fish and wildlife species that are listed as threatened or endangered and their habitats. Endangered species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and threatened species, subspecies, or distinct population segments are those that are likely to become endangered in the near future.

Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any State law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

b. Migratory Bird Treaty Act

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. Wording in the MBTA makes it clear that most actions that result in "taking" or possession (permanent or temporary) of a protected species can be a violation of the Act. The word "take" is defined as meaning "pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect." The provisions of the MBTA are nearly absolute; "except as permitted by regulations" is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

c. Clean Water Act

The federal Clean Water Act (CWA) is administered by the US Environmental Protection Agency (EPA) and the US Army Corps of Engineers (USACE). USACE is responsible for regulating the discharge of fill material into waters of the United States, including lakes, rivers, streams, and their tributaries, as well as wetlands. Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

The discharge of dredged or fill material into waters of the United States is subject to permitting under Section 404 (Discharges of Dredge or Fill Material) of the CWA. Section 401 (Certification) specifies additional requirements for permit review, particularly at the State level. Project proponents must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed action. USACE permits must be certified by the State Water Resources Control Board (SWRCB) in order to be valid. Thus, certification from the SWRCB should be requested at the same time an application is filed with USACE.

Certification from the California Regional Water Quality Control Board (RWQCB) is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the CWA and EPA 404(b)(1) Guidelines.

d. National Pollutant Discharge Elimination System Program

The 1972 amendments to the federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources (Section 402). The NPDES Permit Program is the primary federal program that regulates point source and nonpoint-source discharges to waters of the United States. The SWRCB issues both general and individual NPDES permits for certain activities. The NPDES is discussed in detail in Section A.1.c of Chapter 4.7, Hydrology and Water Quality, of this EIR.

2. State Regulations

The most relevant State laws regulating biological resources are the California Endangered Species Act, the California Fish and Game Code, and the California Native Plant Protection Act (CNPPA), each of which is described below.

TABLE 4.4-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO BIOLOGICAL RESOURCES**

Goal/Policy Number	Goal/Policy Content
Goal CONS-4	**Preserve habitat associated with the Stanislaus River while increasing public access.**
Policy CONS- 4.1	Approved projects, plans, and subdivisions shall avoid conversion of habitat within the existing Stanislaus River riparian corridor, including Great Valley Mixed Riparian Forest, Great Valley Willow Scrub, and Riparian Scrub areas, and shall preserve an open space buffer along the Stanislaus River and associated riparian areas. The open space buffer shall be designed to avoid impacts to habitat and special status species in the riparian corridor, as specified in Policy CONS 5.1, Policy CONS 5.2, Policy CONS 5.3, and Policy CONS 5.6, based on project specific biological resource assessment. The precise size of buffer from the river and associated riparian corridor is to be determined by site specific analysis. The riparian corridor preservation and open space buffer shall be provided through a permanent covenant, such as a conservation easement and shall also include an ongoing maintenance agreement with a land trust or other qualified nonprofit organization. The preservation of the riparian corridor and ongoing maintenance agreement is required prior to City approval of any subdivision of property or development project located in areas outside City limits as of January 1, 2007 (see Figure CONS-1). Low impact recreation could be allowed in this buffer area to the extent that impacts to these sensitive habitats are avoided or fully mitigated by demonstrating no net loss of habitat functions or value. Urban development shall not be allowed in this buffer area.
Policy CONS- 4.3	The City will require compliance with the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan for projects to expand Jacob Myers Park, or other projects within San Joaquin County, as applicable.
Goal CONS-5	**Preserve the natural diversity in the Riverbank planning area.**
Policy CONS- 5.1	Approved projects, plans, and subdivisions shall avoid urban development of the existing Stanislaus River riparian corridor and other habitat that is rare, declining, unique, or supportive of special status species.

TABLE 4.4-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO BIOLOGICAL RESOURCES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy CONS- 5.2	Development applications involving areas with important habitat shall submit site plans that specifically show how development will avoid impacts to habitat that is rare, declining, unique, or supportive of special-status species.
Policy CONS- 5.4	When the loss of important habitat is unavoidable, mitigation measures will be designed to reduce impacts to the maximum extent feasible. This mitigation may include, but is not limited to off-site mitigation banking with restoration and enhancement components. For projects that would affect the function and value of river, stream, lake, pond, or wetland features, each of these features shall be delineated. For wetlands, the delineation shall be conducted in accordance with the US Army Corps of Engineers (USACE) Wetland Delineation Manual and verified by USACE. The project applicant shall determine the exact acreage of important habitat (including those protected by federal, state, regional, and/or local regulations) that would be impacted by project implementation. A mitigation plan to replace or rehabilitate affected habitats in a manner that ensures no net loss of habitat functions and values shall be prepared and implemented in accordance with applicable regulations. The plan shall be reviewed and approved by the appropriate regulatory agencies and all relevant permits and authorizations shall be obtained. Mitigation monitoring shall be conducted to ensure performance criteria are met.
Policy CONS- 5.5	Approved projects, plans, and subdivisions shall comply with applicable federal and state laws and regulations (e.g., federal and State endangered species acts and California Fish and Game Code) that require the protection of special-status species.
Policy CONS- 5.6	For all development projects involving discretionary review that have the potential to affect special status species, the project applicant shall be required to perform a reconnaissance level assessment of the project site for special-status species and their habitat. For projects with the potential to have a substantial adverse effect on special status species, their habitats, or movement corridors, or result in the fragmentation of their habitats, a Biological Inventory Report shall be prepared by a qualified biologist, to determine if, and to what extent special-status species and their habitat may be affected by a proposed project. Projects shall be designed to avoid disturbance or fragmentation of important habitats and wildlife movement corridors. For

TABLE 4.4-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO BIOLOGICAL RESOURCES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
	projects where avoidance is not possible, the project applicant shall be required to fully mitigate the effects the development on special-status species, and the loss and/or fragmentation of their habitat.
Policy CONS- 5.7	A mitigation plan shall be prepared and reviewed and approved by the appropriate regulatory agencies for projects where avoidance of adverse effects to special-status species is not feasible, and authorization for take of listed species shall be obtained, if necessary. The mitigation plan shall include measures to minimize potential for effects during project construction (e.g., pre-construction surveys and timing of construction) and measures to compensate for loss of special-status species habitat. Loss of Swainson's hawk foraging habitat shall be compensated for by preservation and management of foraging habitat of at least a similar quality at an appropriate location. Mitigation plans shall identify an appropriate mitigation site, compensation acreage, performance criteria, and monitoring and management requirements to ensure the site provides suitable habitat for the applicable species. Long-term protection of mitigation lands shall be ensured through fee title acquisition, conservation easement, or other suitable mechanisms. Long-term management of mitigation lands shall be ensured by establishing a management endowment or other suitable funding source. Alternatively, it may be appropriate to contribute funds to existing mitigation programs. Use of such a program shall be approved by the appropriate regulatory agencies.

Source: City of Riverbank General Plan 2005 to 2025.

conditional on approval of a tree protection plan and issue of tree conservation permit by the City. Any permit may be voided if the terms of the Oak and Landmark Tree Ordinance are violated.

B. Existing Conditions

This section describes the existing biological resources on the RAAP site.

1. Biological Communities

This section provides a general description of the biological communities present on the RAAP site. The biological communities in this section are described using lists of common or typical species of flora and fauna that are known or expected to occur in the area.

The RAAP Site is 146 acres and is bounded by Townsend Avenue and railroad tracks in the north, Claribel Road to the south, and Claus Road to the west. Under operation of the US Military, the RAAP Site was the primary manufacturing plant for the RAAP facility. The biological communities present at the site are discussed below.

a. Ruderal Grassland

Ruderal grassland exists on the southern periphery of the RAAP site. This area was a former parking lot site that has become vegetated with non-native plant species. These include yellow starthistle (*Centaurea solstitialis*), wildoat (*Avena fatua*), soft chess (*Bromus hordeaceus*), and dove weed (*Eremocarpus setigerus*).

Wildlife species observed within the ruderal grassland during a previous field study[1] included the American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), European starling (*Sturnus vulgaris*), lark sparrow (*Chondestes grammacus*), and killdeer (*Charadrius vociferus*). Ruderal grassland areas also provide foraging habitat for raptor species including the red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus leucurus*), and Swainson's hawk (*Buteo swainsoni*); and nesting habitat for the western burrowing owl (*Athene cunicularia).* Mammals observed include deer mouse (*Peromyscus maniculatus*), black-tailed jackrabbit (*Lepus californicus*), and California ground squirrel (*Spermophilus beecheyi*); and reptile species observed include the western fence lizard (*Sceloporus occi-*

[1] US Department of the Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of the Riverbank Army Ammunition Plant, California,* page 4-56.

dentalis), side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis catenifer*).

b. Irrigated Pasture

The irrigated pasture on the RAAP site was formerly annual grassland, but is now irrigated to provide pasture as year-round forage for livestock. The irrigated pasture provides moderate habitat value for wildlife species; however, this area experiences a high level of disturbance from cattle and human traffic. Plant species found in irrigated pastures on the site include Dallis grass (*Paspalum dilatum*), bird's-foot trefoil (*Lotus corniculatus*), curly dock (*Rumex crispus*), and a few sedge species (*Carex sp.*).

Wildlife species observed within the irrigated pasture include brewer's blackbird (*Euphagus cyanocephalus*), northern mockingbird (*Mimus polyglottos*), western meadowlark, and western kingbird (*Tyrannus verticalis*). The irrigated pasture may also provide foraging habitat for raptor species, and foraging and nesting habitat for western burrowing owls.

c. Emergent Marsh

Emergent marshes develop when areas of land are inundated with water, and are adapted by species such as Cattails (*Typha latifolia*) and arrowhead (*Sagittaria cuneata*), that thrive in water-saturated soils. Emergent marsh areas are important wildlife habitat areas for a variety of bird species, as well as other animals. There are two areas of emergent marsh that develop on the RAAP site; within the stormwater ditch on the southeastern portion of the site; and within the water detention basins in the northwestern portion of the site.

Animal species observed within the emergent marsh area include the red-winged blackbird (*Agelaius phoeniceus*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), bullfrog (*Rana catesbeiana*), and Pacific treefrog (*Hyla regilla*).

d. Wetland

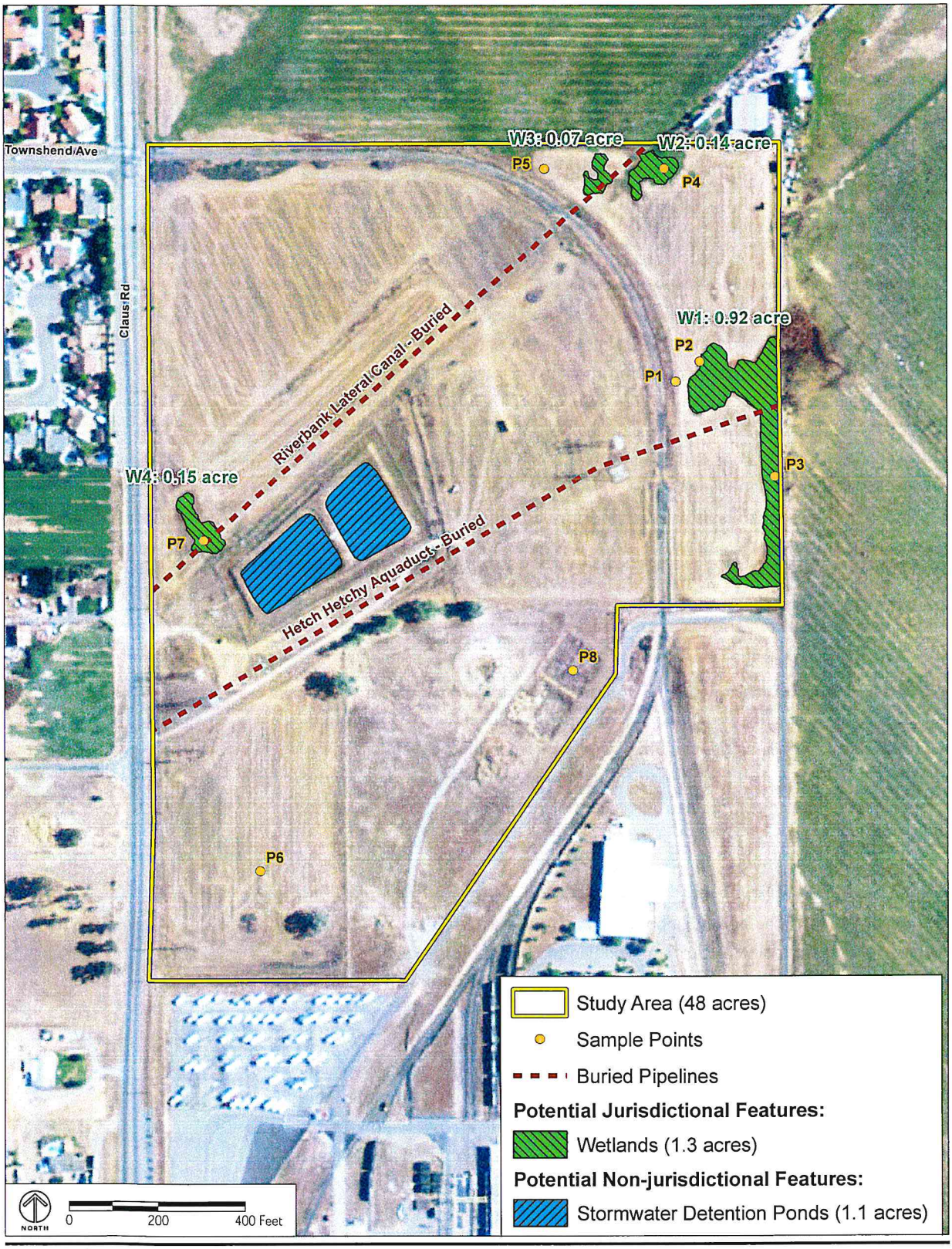
In 2012, WRA Environmental Consultants prepared a wetland delineation and determined that 1.3 acres of wetlands located within the RAAP site may be considered jurisdictional under Section 404 of the Clean Water Act. The wetland areas were seasonal wetlands dominated by facultative to facultative wet wetland species including wild rye, hyssop loosestrife, flat-leaf rush, rabbit's foot grass, and nut sedge. Wetter portions of the wetlands were dominated by spike rush and in one case cattails. Soils in areas identified as seasonal wetlands generally consisted of native soils, and contained redoximorphic features such as iron concentrations. The WRA report concluded that the wetland areas appear to be isolated depressions as they are not tributary to a "navigable waters of the US" Therefore they may be exempt from Section 404 jurisdiction as isolated wetlands. Figure 4.4-1 shows the areas within the RAAP site that may be considered wetlands.

e. Developed Land

Developed land on the RAAP site is sparsely vegetated with non-native species that provide little, if any, habitat value to wildlife species. These buildings, particularly abandoned buildings, may provide structural habitat for bat species. Bat roosts may include day roosts or maternity roosts; however, the presence or absence has not been determined as the buildings have not been surveyed.

f. Riparian Woodland

The periphery of the ponds supports a healthy and diverse structure of mature riparian woodland. Riparian woodland habitat consists of tall, dense, deciduous, broadleaf trees that prefer the alluvial soils of riverbanks. In the San Joaquin Valley, typical riparian woodland species include Fremont cottonwood (*Populus fremontii*), California box elder (*Acer negundo ssp. californicum*), black willow (*Salix gooddingii*), western sycamore (*Planatus racemosa*), and valley oak (*Quercus lobata*). Mature riparian woodland has a multilayered understory, which is comprised of species such as the arroyo willow (*Salix lasiolepis*) and blue elderberry (*Sambucus mexicana*). Common herbaceous



Source: WRA Environmental Consultants, 2011.

FIGURE 4.4-1

POTENTIAL JURISDICTIONAL WETLANDS

species at the bottom understory level include Mugwort (*Artemisia douglasiana*), Mexican tea (*Chenopodium ambrosioides*), and California creek nettle (*Urtica dioica ssp. garcilis var. californica*).

Riparian woodland areas serve as foraging, nesting, and refuge habitat for a variety of bird species, including song birds, raptors, and water fowl. Mammals found in riparian woodland communities include the Western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and mule deer (*Odocoileus hemionus*). Bat species that roost in woodlands could establish day roosts and maternity roosts in established riparian forests.[2]

g. Ruderal Grassland

The ponds are regularly maintained and are devoid of wild vegetation, except for ruderal grassland that is present around pond edges, as described in Section B.1.a.*i*, above.

2. Special-Status Species

Special-status species are plants and animals that are legally protected under the ESA, CESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as:

- Species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (72 FR 69034, December 6, 2007).

[2] US Department of the Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of the Riverbank Army Ammunition Plant, California,* page 4-57.

- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the CNPPA (California Fish and Game Code 1900 et seq).
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Native Plant Society, 2008).
- Plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution, which may be included as special-status species on the basis of local significance or recent biological information (California Native Plant Society, 2008).
- Animal species of special concern to the CDFG (2009).
- Animals fully protected in California (California Fish and Game Code 3,511 [birds], 4,700 [mammals], 5,050 [amphibians and reptiles], and 5,515 [fish]).

The following information on special-status species for the RAAP site is based on information from the US Army's Environmental Assessment (EA).[3] There were no species-specific surveys conducted and no special-status wildlife species observed for the purposes of this EIR. The occurrence of these species was determined during field studies for the *Biological Resource Study at the Riverbank Ammunition Plant and Wastewater Treatment Ponds, Stanislaus County, California,* produced by Jones & Stokes in 2007 as a technical report for the EA.

[3] US Department of the Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of the Riverbank Army Ammunition Plant, California,* page 4-58.

The special-status plant species known or expected to occur in the RAAP region are listed in Table 4.4-2. The EA notes that these species were also identified based on a review of California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) occurrences for special-status plant species reported in the Riverbank USGS quadrangle and for Stanislaus County. As described in the column titled, *Likelihood of Occurrence in the Study Area*, none of the ten plant species having potential to occur in the project area are likely to be found there. The explanation for this is that the majority of the special-status species are associated with seasonal wetlands, such as vernal pools, which do not occur in the project area. Also, of the three species known to occur in annual grassland habitat, big tarplant, beaked clarkia, and Hartweg's golden sunburst, two occur at elevations ranging between 95 and 1,640 feet, which are generally higher than the average elevation of the RAAP site of 135 feet. The Hartweg's golden sunburst does occur at the RAAP elevation; however, the grassland habitat that supports this species is so heavily degraded and disturbed in the study area that is unlikely that this species exists at the RAAP installation.

The special-status animal species known or expected to occur in the RAAP region are listed in Table 4.4-3. The EA notes that the review of special-status animal species for the RAAP installation was based on CNDDB records, the San Joaquin County Multi-Species Habitat Conservation Plan, and the City of Riverbank General Plan. Of the 20 special-status wildlife species identified as having potential to occur within the project area, not all species have a strong likelihood of occurring. Six of these species – vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, giant garter snake, greater western mastiff bat, and San Joaquin kit fox, are highly unlikely to occur in the vicinity of the Plan Area. The reason these species are unlikely to occur is because the project area either has no suitable habitat, such as vernal pool habitat, or the project area is outside of the species' range.

In addition, a biological reconnaissance for special-status species was performed for the City of Riverbank General Plan EIR. The General Plan EIR

TABLE 4.4-2 **SPECIAL-STATUS PLANT SPECIES KNOWN TO OCCUR IN THE REGION OF RAAP**

Common & Scientific Names	Legal Status[a] Federal/State/ CNPS	Geographic Distribution/ Floristic Province	Habitat Requirements	Blooming Period	Likelihood of Occurrence in the Study Area
Big tarplant *Blepharizonia plumose*	–/–/1B.1	Western San Joaquin Valley, San Francisco Bay area, South Coast Ranges	Valley and foothill grassland; 30–505 meters	Jul–Oct	Not present; study area is outside elevational range of this species.
Succulent owl's-clover *Castilleja campestris* ssp. *Succulenta*	T/E/1B.2	Southern Sierra Nevada foothills, eastern San Joaquin Valley	Vernal pools (often acidic); 50–750 meters	Apr–May	Not present; no suitable habitat available, study area is outside elevational range of this species.
Hoover's spurge *Chamaesyce hooveri*	T/–/1B.2	Central Valley from Tehama to Tulare Counties	Vernal pools; 25–250 meters	Jul–Aug	Not present; no suitable habitat available, study area is outside elevational range of this species.
Beaked clarkia *Clarkia rostrata*	–/–/1B.3	Central Sierra Nevada foothills, San Joaquin Valley	Cismontane woodland, valley and foothill grassland; 60–500 meters	Apr–May	Not present; study area is outside elevational range of this species.
Legenere *Legenere limosa*	–/–/1B.1	Sacramento Valley, North Coast Ranges, northern San Joaquin Valley, and Santa Cruz mountains.	Vernal pools; below 880 meters	May–Jun	Not present; no suitable habitat available
Colusa grass *Neostapfia colusana*	T/E/1B.1	Central Valley with scattered occurrences from Colusa to Merced Counties	Adobe soils of vernal pools; 5–200 meters	May–Aug	Not present; no suitable habitat available
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	T/E/1B.1	San Joaquin Valley from Solano to Tulare Counties	Vernal pools; 10–755 meters	Apr–Sep	Not present; no suitable habitat available
Hairy Orcutt grass *Orcuttia pilosa*	E/E/1B.1	Central Valley from Tehama to Madera Counties	Vernal pools; 55–200 meters	May–Sep	Not present; no suitable habitat available; study area is outside elevational range of this species.
Hartweg's golden sunburst *Pseudobahia bahiifolia*	E/E/1B.1	Central Sierra Nevada foothills, eastern San Joaquin Valley	Clay soils in valley and foothill grassland; 15–150 meters	Mar–Apr	Low; habitat conditions of poor quality (i.e. ruderal annual grassland) and suitable microhabitat (clay soils) may not be present. No known occurrences within 5 mi.

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TABLE 4.4-2 **SPECIAL-STATUS PLANT SPECIES KNOWN TO OCCUR IN THE REGION OF RAAP** (CONTINUED)

Common & Scientific Names	Legal Status[a] Federal/State/ CNPS	Geographic Distribution/ Floristic Province	Habitat Requirements	Blooming Period	Likelihood of Occurrence in the Study Area
Greene's tuctoria *Tuctoria greenei*	E/–/1B.1	Scattered distribution along eastern Central Valley and foothills from Shasta County to Tulare County	Dry vernal pools; elevation 30-1070 meters	May–Sep	Not present; no suitable habitat available, study area is outside elevational range of this species.

[a] Status explanations:

Federal
E = listed as endangered under the federal ESA.
T = listed as threatened under the federal ESA.
– = no listing.

State
E = listed as endangered under the California ESA.
– = no listing.

California Native Plant Society (CNPS)
1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
.1 = seriously endangered in California
.2 = fairly endangered in California
.3 = not very endangered in California

TABLE 4.4-3 **SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR AT RAAP AREAS**

Common & Scientific Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in the Study Area
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	T/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None. No suitable habitat in study area.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/--	Shasta County south to Merced County	Vernal pools and ephemeral stock Ponds	None. No suitable habitat in study area.
Amphibians				
California tiger salamander *Ambystoma californiense*	T/SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	None. No suitable habitat in study area.
Reptiles				
Giant garter snake *Thamnophis couchii gigas*	T/T	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low-gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter.	None. No suitable habitat in study area.
Birds				
Swainson's hawk *Buteo swainsoni*	--/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High potential to nest in riparian forests along Stanislaus River and forage in ruderal grassland and irrigated pasture.

TABLE 4.4-3 **SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR AT RAAP AREAS** (CONTINUED)

Common & Scientific Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in the Study Area
Tricolored blackbird *Agelaius tricolor*	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony.	Low potential to nest in emergent marsh.
Western burrowing owl *Athene cunicularia hypugaea*	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High potential to nest and forage in ruderal grassland at ammunition plant.
White-tailed kite *Elanus leucurus*	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High potential to nest in riparian forests along Stanislaus River and forage in ruderal grassland and irrigated pasture.
Mammals				
Greater western mastiff bat *Eumops perotis californicus*	--/SSC	Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border.	Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but may also use crevices in trees, buildings, and tunnels.	None. No suitable habitat in study area.
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County.	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	None. No suitable habitat in study area.

TABLE 4.4-3 **SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR AT RAAP AREAS** (CONTINUED)

Common & Scientific Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in the Study Area
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	--/SSC	Coastal regions from Del Norte County south to Santa Barbara County	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one on-site visit.	Low potential to roost in buildings at ammunition plant.

[a] Status explanations:

Federal

E = listed as endangered under the federal ESA.
T = listed as threatened under the federal ESA.
– = no listing.

State

E = listed as endangered under the California ESA.
T = listed as threatened under the California ESA.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
– = no listing.

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determined that the snowy egret and the black-shrouded kite are likely to occur at the RAAP site and within its immediate surroundings.

The RAAP site does, however, provide suitable habitat for special-status animals. The ruderal grassland and irrigated pasture communities provide nesting and foraging habitat for the western burrowing owl and foraging habitat for Swainson's hawk and white-tailed kite. The emergent marsh located in the detention pond provides marginal nesting habitat for the tricolored blackbird. No survey for bats has been conducted in the existing buildings, however, possible bat habitat does exist. The potential for the Western Townsend's big-eared bat, a state species of special concern, and Mexican free-tail bats (*Tadarida brasiliensis*) and Yuma myotis (*Myotis yumanensis*), other non-special-status bat species, to roost in the numerous large buildings on the site is dependent on the lack of human activity in some of the older buildings.

C. Standards of Significance

Implementation of the Draft RAAP Site Specific Plan would result in future development that would have a significant biological resource impact if they would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS, or as defined under CEQA Guidelines Section 15380a.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinances.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan..

D. Impact Discussion

The following discussion provides an analysis of potential project and cumulative biological resource impacts that could occur as a result of implementation of the Draft RAAP Site Specific Plan.

1. Project Impacts

a. Have a substantial adverse effect, either directly or through habitat modifications, on a plant or animal population, or essential habitat, defined as a candidate, sensitive or special-status species.

There are ten special-status plant species and eleven special-status animal species known to be present in the general vicinity of the two non-contiguous sites which make up the Plan Area. Potential impacts to special-status plant and animal species on each of the two sites are discussed below.

i. Special-Status Plant Species

Although there are special-status plant species known to occur in the general vicinity of the RAAP site, as shown on Table 4.4-2, the site does not contain suitable habitat for the majority of these plants, which occur in seasonal wetland areas that do not exist inside the boundaries of the Plan Area. The big tarplant and beaked clarkia, for example, occur on grasslands at higher elevations than in the Plan Area. Habitat conditions for the tenth species, Hartweg's golden sunburst (Pseudobahia bahiifolia), are poor as the grassland area

located within the RAAP site is heavily degraded and disturbed. Consequently, the Plan Area is unlikely to support this species. Buildout of the Plan would therefore result in a *less-than-significant* impact to special-status plant species.

ii. Special-Status Animal Species

None of the 11 special-status animal species found in the surrounding area are known to occupy the Plan Area and the property is not known to provide nesting or important hunting areas for any special-status animal. Additionally, as shown in Table 4.4-2, vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, giant garter snake, greater western mastiff bat, and San Joaquin kit fox are all highly unlikely to be present because the site does not contain suitable habitat or elevation to support them. However, several migratory or transient species could potentially pass through the RAAP site.

Sections of the RAAP site with ruderal grassland and irrigated pasture provide suitable habitat for western burrowing owl and suitable foraging habitat for Swainson's hawk and white tailed kite. Future development in the Plan Area would remove these sections of suitable habitat, although none of the potentially affected species are known to occupy the Plan Area. In compliance with General Plan Policy CONS-5.7, lost Swainson's hawk foraging habitat would be compensated by preservation and management of foraging habitat of similar quality at an appropriate location as approved by CDFG. Implementation of the Plan could also involve the preservation of the existing wetlands area adjacent to the northeast stormwater retention pond on the site, which would increase the amount of potential nesting habitat available to tricolored blackbirds and red-winged blackbirds. This would be a beneficial effect and, overall, buildout of the Specific Plan would not result in a significant adverse impact to any special-status birds.

The eaves of many buildings in the RAAP site, particularly those buildings that have been abandoned, could offer roosting habitat to Townsend's big-eared bats. Future development in the Specific Plan Area could involve dem-

olition and redevelopment of many buildings on the site, and as such, could destroy, disturb, or interfere with the maternity roosts of this special-status bat species. This is a *potentially significant* impact.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community type.

The Plan Area does not contain riparian habitat. As discussed above, the Specific Plan would include the preservation of important open spaces containing biological habitat. As a result, implementation of the Specific Plan would have a *less-than-significant impact* on riparian habitat and sensitive natural community types.

c. Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act, through direct removal, filling, hydrological interruption, or other means.

As shown in Figure 4.4-1, 1.3 acres of wetlands are located within the project site. However, these areas appear to be isolated depressions as they are not tributary to a "navigable waters of the US" Furthermore, vegetation within the Study Area consists primarily of cut hay, and uncultivated areas were dominated by ruderal, non-native grass and herbaceous species. Therefore the wetlands located within the RAAP site may be exempt from Section 404 jurisdiction because they are considered isolated wetlands. As a result, a *less-than-significant* impact would occur.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, their wildlife corridors or nursery sites.

Buildout of the Plan would involve development of RAAP site that is currently undeveloped ruderal grassland and emergent marsh. Although the RAAP site is already largely built out, additional development in this area would diminish foraging grounds for raptors and other migratory bird species. However, the northwest stormwater retention pond, shown in Figure 4.4-1, would be preserved and would provide habitat for tricolored blackbirds and red-winged blackbirds. Additionally, open space and agricultural land in the vicinity of the RAAP site would remain in its current condition, accessible to

migratory birds. Potential impacts to migratory bat species would be precluded to the maximum extent practicable by Mitigation Measure BIO-1, described below. Therefore, overall, impacts to migratory species and wildlife corridors from the Plan would be *less than significant.*

e. Conflict with any local ordinances or policies protecting biological resources.

As described above, buildout of the Plan would comply with General Plan Policy CONS-5.4 with respect to the delineation and net protection of wetlands and with Policy CONS-5.7 regarding loss of Swainson's hawk foraging habitat. As required in General Plan Policy CONS-5.7, future project applicants in the Plan Area would prepare a mitigation plan for review and approval by the appropriate regulatory agencies, including the CDFG, to minimize the potential impacts during construction and to compensate for loss of Swainson's hawk foraging habitat by identifying an appropriate mitigation site, compensation acreage, performance criteria, and monitoring requirements. There would be no conflict with other General Plan policies protecting biological resources. There are no Oak or landmark trees on the RAAP site. Therefore, overall, there would be no conflicts with local ordinances or policies protecting biological resources and impacts would be *less than significant.*

f. Conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan.

The Plan would have a significant impact if it would conflict with the Recovery Plan for Upland Species of San Joaquin Valley (RPUSSJV). Three species protected under the RPUSSJV are potentially present in the Plan Area: the San Joaquin kit fox, Riparian (San Joaquin Valley) woodrat, and Riparian brush rabbit. As described above, San Joaquin kit fox is highly unlikely to be present inside the boundaries of the RAAP site because the site does not contain suitable habitat for this species. Additionally, Riparian (San Joaquin Valley) woodrat and Riparian brush rabbit are restricted to mature riparian forests on the Central Valley floor and are not known to be present inside the

boundaries of the Plan Area. Buildout of the Plan would not adversely affect these species and therefore no conflict with the RPUSSJV would result, therefore, *no impact* would occur.

2. Cumulative Impacts

This cumulative analysis considers the implementation of the Draft RAAP Specific Plan in the context of the City of Riverbank General Plan. The Specific Plan proposes development that includes an increase in industrial, office and retail space within a large parcel that currently contains industrial uses. Much of this development would occur in areas currently vacant and not containing sensitive habitat. Some filling of wetland areas within the RAAP site may result from development under the Specific Plan; however, these activities are expected to be limited.

Land uses surrounding the RAAP site include residential commercial, and agriculture. Development as proposed under the Specific Plan does not extend services in a way that would increase development pressure on natural or open space areas in the region because the site is currently being used as an industrial installation. Furthermore, primary biological resources of importance are located along the San Joaquin River, over a mile north of the project site. The Specific Plan would not result in a significant cumulative loss of biological resources due to direct loss of resources, increased use near the resources, or development pressure that would remove the resources. There would be a *less-than-significant* cumulative impact.

E. Impacts and Mitigation Measures

Impact BIO-1: Buildout of the Plan would involve the demolition or redevelopment of buildings on the RAAP site where the maternity roosts of Townsend's big-eared bats are potentially present. This could result in the destruction, disturbance, or interference with the maternity roots of a special-species bat.

Mitigation Measure BIO-1: Implementation of the Plan shall avoid disturbance to the maternity roosts of special-status bats during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than two weeks in advance of any demolition or construction activity involving concrete breaking or similarly noisy or intrusive activities, that would commence during the pup-rearing season (April 15 through August 31), or winter hibernacula season (October 15 through March 1, depending on weather conditions) a qualified bat biologist, acceptable to the CDFG, shall conduct pre-demolition surveys of all potential special-status bat breeding habitat in the vicinity of the planned activity. Depending on the survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats:

1. If active roosts are identified during pre-construction surveys, a no disturbance buffer will be created by the qualified bat biologist, in consultation with the CDFG, around active roosts during the breeding season. The size of the buffer will take into account factors such as the following:
   - ♦ Noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction activity;
   - ♦ Distance and amount of vegetation or other screening between the project site and the roost; and
   - ♦ Sensitivity of individual nesting species and the behaviors of the bats.
2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required.
3. Pre-construction surveys are not required for demolition or construction activities scheduled to occur during the non-breeding and winter hibernacula season (September 1 through October 15, and March 1 through April 15).

4. Noisy demolition or construction activities as described above (or activities producing similar substantial increases in noise and activity levels in the vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees would be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above.
5. Bat roosts initiated during demolition or construction activities are presumed to be unaffected by the activity, and a buffer is not necessary.
6. Destruction of roosts of special-status bats and overt interference with roosting activities of special-status bats shall be prohibited.
7. The noise control procedures for maximum noise, equipment, and operations identified in Chapter 4.12, Noise, of this EIR shall be implemented.

Implementation of the above mitigation measure would reduce potential impacts to the maximum extent practicable.

Significance After Mitigation: *Less than Significant*

4.5 CULTURAL RESOURCES

This chapter discusses cultural resources in the Plan Area and evaluates the potential cultural resource impacts associated with the draft RAAP Site Specific Plan. The following evaluation assesses historical, archaeological, and paleontological resources, as well as potential impacts associated with the disturbance of human remains.

A. Regulatory Framework

This section summarizes key federal and State regulations and policies that apply to historical, archaeological, and paleontological resources and human remains.

1. National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) is the most influential federal law dealing with historic preservation. In addition, Congress has enacted numerous other statutes that affect historic properties. One of the most important provisions of the NHPA is the establishment of the National Register of Historic Places (NRHP), the official designation of historical resources. Districts, sites, buildings, structures and objects are eligible for listing in the Register. Nominations are listed if they are significant in American history, architecture, archeology, engineering, and/or culture. The NRHP is administered by the National Park Service. To be eligible for the NRHP, a property must be significant under Criterion A (history), Criterion B (persons), or Criterion C (design/construction); possess integrity; and ordinarily be 50 years of age or more.

Listing in the NRHP does not entail specific protection or assistance for a property, but it does guarantee recognition in planning for federal or federally-assisted projects (see Section 106), eligibility for federal tax benefits and qualification for federal historic preservation assistance.[1] The NRHP is influ-

[1] The National Parks Service. Website http://www.nps.gov/history/local-law/nhpa1966.htm accessed on September 3, 2009.

[2] 2009 CEQA Guidelines, Section 15064.5(c), page 126.

ential beyond its statutory role because it achieves uniform standards of documentation and evaluation. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

2. California Register of Historic Resources

The California Register of Historical Resources (CRHR) establishes a list of those properties that are to be protected from substantial adverse change (Public Resources Code Section 5024.1). A historical resource may be listed in the CRHR if it meets any of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in California's past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- It has yielded or is likely to yield information important in prehistory or history.

The CRHR includes properties that are listed or have been formally determined to be eligible for listing in the NRHP, State Historical Landmarks and eligible Points of Historical Interest. Other resources require nomination for inclusion in the Register. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office (SHPO) procedures, historic resources or districts designated under a local ordinance consistent with State Historic Resources Commission procedures and local landmarks or historic properties designated under local ordinance.[2]

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[2] The California Environmental Resources Evaluation System. Website http://ceres.ca.gov/ceqa/more/tas/page2.html, accessed on September 3, 2009.

The CRHR was been created to allow local agencies, private groups, and citizens to identify and register California's historic resources so that they may be recognized and protected. The CRHR is modeled closely on the National Register of Historic Places, the primary federal inventory of historic properties. A resource may be eligible to the CRHR at a local, state, or national level. The eligibility criteria state that a site must be considered significant under Criterion 1 (history), Criterion 2 (persons), Criterion 3 (design), or Criterion 4 (potential to yield information); possess integrity; and be classified as a building, structure, object, site, or district.

3. California Public Resources Code

Section 5097 of the Public Resources Code specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the California Native American Heritage Commission (NAHC). Section 5097.5 of the Code states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the State or any city, county, district, authority or public corporation, or any agency thereof. Consequently, the City of Riverbank is required to comply with Public Resource Code Section 5097.5 for its activities on publicly-owned land.[3]

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[3] California Department of Transportation. Website http://www.dot.ca.gov/ser/vol1/sec3/physical/Ch08Paleo/chap08paleo.htm#statelaws, accessed December 3, 2009.

4. California State Health and Safety Code

Section 7052 of the California State Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.[4]

5. California State Senate Bill 18

Implementation of Senate Bill (SB) 18, which went into effect January 1, 2005, set forth new requirements for local governments (cities and counties) to consult with Native American tribes to aid in the protection of traditional tribal cultural places through local land use planning.[5] The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early stage of planning for the purpose of protecting, or mitigating impacts to, cultural places. The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level land use designations are made by a local government.

6. City of Riverbank

The Riverbank General Plan includes several goals and policies that relate to preservation of cultural resources within the city. Table 4.5-1 provides a list of these goals and policies.

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[4] The California Environmental Resources Evaluation System. Website http://ceres.ca.gov/nahc/has.html, accessed on December 3, 2009.

[5] SB 18 amends Government Sections (GC) 65040.2, 65092, 65351, and 65560, while adding GC Sections 65352.3, 65352.4 and 65562.5.

TABLE 4.5-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO CULTURAL RESOURCES**

Goal/Policy Number	Goal/Policy Content
Goal CONS-1	**Maintain Riverbank's historic resources.**
Policy CONS-1.1	Historically significant buildings shall not be demolished or changed in way that affects their historic value, except to protect public health and safety, or where saving the structure is infeasible.
Policy CONS-1.2	Buildings and other cultural resources that are not historically significant, but have historical or architectural value should be preserved or relocated, wherever feasible. Where this is not feasible, the resource shall be documented and the information retained in a secure, but publicly accessible location. An acknowledgment of the resource should be incorporated in historic signage and the reuse or display of historic materials and artifacts.
Policy CONS-1.3	The City will promote and encourage adaptive reuse of historic buildings. Consistent with health, safety, and other basic considerations, the City will be flexible in applying building and zoning standards to encourage continued use and adaptive reuse of historic buildings.
Policy CONS-1.4	The City shall coordinate with local, State, and federal agencies to ensure that historic preservation regulations are implemented.
Goal CONS-2	**Minimize negative impacts to archaeological resources.**
Policy CONS-2.1	Approved projects, plans, and subdivision requests shall incorporate all available measures, with a preference for avoidance, to reduce or eliminate impacts to known and unknown archaeological and paleontological resources.
Policy CONS-2.2	All Native American cultural and archaeological sites shall be protected permanently from urban development, wherever possible.
Policy CONS-2.3	The City shall restrict the circulation of cultural resource locational information to prevent potential site vandalism.
Policy CONS-2.4	The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting with the Central California Information Center of the California Historical Resources Information System (CHRIS) and, if necessary, consulting with a qualified professional archaeologist regarding the significance of the site. Implementation of this policy shall be guided by Section 15064.5 of the State CEQA guidelines.

TABLE 4.5-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO CULTURAL RESOURCES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy CONS-2.5	As guided by State law, in the event of the inadvertent discovery of previously unknown archaeological sites during excavation or construction, all construction affecting the site shall cease and the contractor shall contact the appropriate City agency. If Native American human remains are discovered, the City shall work with local Native American representatives to ensure that the remains and associated artifacts are treated in a respectful and dignified manner.

Source: City of Riverbank General Plan 2005-2025.

B. Existing Conditions

This section described the existing conditions pertaining to cultural resources in the RAAP Plan Area and its surroundings.

1. Historic Context

a. From Pre-historic Times to the 20th Century

When the first Spanish missionaries came east to the lower San Joaquin River in 1776, the valley floor was inhabited by groups who called themselves "Yokuts" and groups living along the Stanislaus River were known as Lakisamne Yokuts.[6] Estimates of the number of valley Yokuts at this time range from 11,000 to 31,000, and more than 50 burial sites, some as large as 45 acres, have been found, indicating a substantial population. The Spanish reached the Stanislaus River in 1806, establishing missions. From 1828 to 1829, Estanislao, Chief of the Laquisismas Yokuts, lead a rebellion against the missions. Ultimately, the rebellion was suppressed, but Stanislaus County derives its name from the vanquished Chief.

[6] City of Riverbank, 2005. City of Riverbank General Plan Draft Environmental Impact Report, page 4.6-1.

Mexico gained independence from Spain in 1821 and controlled the area around what is now Riverbank until 1846, when the US took control of what is now the State of California at the end of the Mexican War. The Mexicans referred to an area of some 35,000 acres of land between present-day Riverbank and Oakdale as the San Joaquin District. Early settlements in the central valley were established along the rivers, the primary transportation routes available at the time. With California's gold rush in 1849, a stampede of people flooded the state, seeking their fortunes. Following the gold rush many stayed to establish towns and cities in northern California.

Stanislaus County was established in 1854, and transportation into the area became easier with the advent of river steamers and better roads. Population grew rapidly after that, tripling between 1860 and 1870. Cattle and wheat became important exports for the County in the 1800s, driving the construction of railways. In 1896, the community of Riverbank was established, becoming the location of the railroad division terminal for the Atchison, Topeka, and Santa Fe Railroad companies in 1910. Riverbank incorporated as a California municipality in 1922.

b. Riverbank Army Ammunition Plant

With World War II came an increased need for aluminum, a necessity in the production of aircraft and a commodity the United States had limited ability to produce. Faced with aluminum shortages, construction of the Riverbank Army Ammunition Plant (RAAP) was authorized in August 1941.[7] The RAAP was one of nine new aluminum production facilities on the West Coast funded by the Defense Plant Corporation, (DPC) under the Reconstruction Finance Corporation (RFC). Since aluminum production requires large amounts of energy, most of these plants were located near hydro-electric power sources. The RAAP drew power from the Hetch Hetchy transmission line, which passes through the Plan Area. The location was also selected for its proximity to the Atchison, Topeka & Santa Fe Railway, which allowed

[7] Knapp Architects, 2009. *Historical Resources Assessment Riverbank Army Ammunition Plant Riverbank, California*, page 7.

for the transport of aluminum ore into, and aluminum ingots out of, the facility. The concentration of shipyards and aircraft production facilities in operation during World War II in the San Francisco Bay Area made Riverbank a convenient location for the aluminum plant.

Operated by the Aluminum Company of America, (later ALCOA) the RAAP originally consisted of 27 buildings. Configured with six single-story, steel-frame "Pot Rooms" (Buildings 1-6) laid out in parallel rows, annual output capacity of the RAAP was 96,000,000 pounds.[8] Each Pot Room was 46 by 743 feet, and contained 64 smelting pots in which alumina was electrolytically reduced. Each building was fed by large silo-like structures which moved along an overhead rail system depositing ore in the pots. Perpendicular to these buildings was the two-story brick Rectifier Building (Building 13) which supplied power to the Pot Rooms. In case of burned-out transformers, a frequent occurrence, a set of railroad tracks led north from the Rectifier Building toward the Transformer Repair Building (Building 15). These tracks could be used to carry the massive transformers back and forth to the high-bay repair building where huge cranes lifted them to repair stations.

Flanking the Pot Rooms was the Carbon Rodding Building (Building 7), and opposite the Rectifier Building, on the east end of the Pot Rooms, was the Metal Service Building (Building 8). The Metal Shop (Building 9) and Carbon Unloading and Shipping Building (Building 10), Ore Unloading Building (Building 11), and Boiler House (Building 12) lay north of the cluster of smelting buildings. The Dispensary/Washroom (Building 14) greeted workers as they left building 7, and just further south lay a cluster of administrative brick buildings (Buildings 16-18). These structures, unlike the industrial buildings dominating the site, incorporated more architectural detail, with keystoned, splayed lintels at doors and windows, gabled roofs, and regular fenestration in a domestic-institutional pattern.

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[8] Knapp Architects, 2009. *Historical Resources Assessment Riverbank Army Ammunition Plant Riverbank, California*, page 7.

With the close of World War II, the need for aluminum dropped substantially, and the RAAP was declared surplus and closed in August of 1944 after only one year in production. The Kaiser Corporation purchased the aluminum production equipment, and the facility was used to store surplus grain while the local government struggled to come up with a more productive use for the plant.

The Korean War provided the next opportunity for the facility's reuse, and in 1951 the plant was converted to manufacture steel cartridge casings, operating under Norris Industries. Contracting with Bechtel Corporation, Norris Industries ordered the installation of six production lines in Buildings 1-6, which allowed for the production of 90-millimeter (mm) and 105-mm cartridge cases and US Navy 3"/50 and 5"/38 caliber cases. Building 3 was enlarged to accommodate presses, and Building 120 was erected to house heat-treating facilities. The production lines were supported by a rash of new buildings, and by the end of the Korean War, there were over one hundred buildings on the site. The plant operated from 1952 to 1958, when it was again declared surplus and deactivated. The facility was unsuccessfully put up for sale in 1963.

In 1966 the plant was again reactivated to produce cartridge casings and mortar projectiles for use in the Vietnam War. Bechtel Corporation helped retrofit the facilities, and Buildings 2, 3, and 4 were outfitted to produce 105-mm cartridge casings, while Building 1 produced mortar projectiles in addition to cartridge casings. Building 7 was also outfitted to produce 81-mm mortar projectiles. The plant stayed in full operation until 1975.

Although lines 2 through 7 were temporarily decommissioned, line 1 was retrofitted in 1975 to produce 81-mm projectiles, and in 1976, Building 6 was outfitted to produce grenade body assemblies. As production waned, Norris Industries was permitted to lease excess space on the site to private tenants involved in light and heavy industry through the US Army's Armament Retooling and Manufacturing Support (ARMS) program. In 2005, the Base Realignment and Closure Commission (BRAC), convened by the US Congress,

recommended that the RAAP be closed and manufacturing operations overseen by Norris Industries be relocated to the Rock Island Arsenal in Illinois. Production of ammunition at the RAAP ceased in 2010 although some private tenants continue to use space in the facility today.

2. Archaeological and Paleontological Resources

California's prehistoric population of Native Americans tribes was large and diverse. Tens of thousands of archaeological sites representing villages, hunting, gathering and fishing areas, religious and ceremonial locations, trails, and rock art sites, have been recovered throughout the state. Archaeologists identify such sites by the presence of groundstone; stone artifacts, such as arrow or spear points; circular depressions representing the remains of pit houses or ceremonial structures; and "midden," which is darker soil resulting from human occupation. These remains mark areas which have been, and often continue to be, of economic, social, and/or religious significance to peoples today.

In the Riverbank area in general, including the Plan Area, there is a lack of information pertaining to actual or potential paleontological and prehistorical resources. Consequently, it is difficult to predict how life may have been during prehistoric times. Heavy use has impacted the land so that actual and potential pre-historical resources have been made indistinguishable. However, the available information about the prehistory of the Plan Area has high significance. The Plan Area is in an area of non-riverine grassland and is likely to have smaller and less dense remains than the floodplain, and would represent short-term occupation only, because of limited food, shelter, fuel, and water in the area.

A records search of the files at the Central California Information Center (CCIC), located at the California State University, Stanislaus, indicated that no prehistoric cultural resources are recorded within the City of Riverbank General Plan Planning Area, which includes Plan Area. However, this does

not preclude the possibility that archaeological or paleontological resources may be present in surface and subsurface contexts.[9]

Although there are no paleontological or pre-historical resources recorded in the Plan Area, there are two resource sites in the vicinity. SJO-191, a large artifact scatter on a low terrace of the Stanislaus River, is the nearest recorded archeological site to the RAAP. SJO-191 is located 5.5 miles northwest of the RAAP, 1.5 miles downstream from SJO-191 is SJO-10. SJO-10 is a burial and habitation site on a mound in the Stanislaus floodplain. There are no other recorded sites within 10 miles of the RAAP.[10]

3. Historical Resources

There are four sites within the RAAP site that are potentially identifiable but not presently recorded with the National Register of Historic Places (NRHP). These sites have been distinguished through archival research and a brief tour of the RAAP installation.[11,12]

- **RAAP-1 and RAAP-2** are two unidentified historic structures that likely functioned as part of the domestic or agricultural history of the site. The proximity of the structures suggest they may have been associated, perhaps a house and barn.
- **RAAP-3** is the homestead and ranch of George Squire, who owned and resided on property in the area. This resource includes a wood-frame farmhouse, a barn, and associated outbuildings.

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[9] City of Riverbank, 2008. *2005-2020 General Plan Update DEIR.*

[10] US Department of the Interior, National Park Service, 1988. *An Archeological Overview and Management Plan for the Riverbank Army and Ammunition Plant, Riverbank, California,* pages 2-3 and 2-9.

[11] US Department of the Interior, National Park Service, 1988. *An Archeological Overview and Management Plan for the Riverbank Army and Ammunition Plant, Riverbank, California,* page 4-1.

[12] Please note that RAAP-4, as identified by the 1988 National Park Service Overview and Management Plan, is not located within the Specific Plan Area, and is not included in this list.

- **RAAP-5** is a trash dump near the Stanislaus River with early twentieth century artifacts.

Additionally, there are properties and structures that have been recorded, and are eligible or ineligible for listing in the NRHP. The Historic Property Data File Historic Resources Inventory (HRI), which is maintained by the State Office of Historic Preservation, identifies such properties. The listing for Stanislaus County, including the City of Riverbank, includes 39 buildings or structures in or adjacent to the City of Riverbank. Of the 39 listed properties, 22 are located on the RAAP Site at 5300 Claus Road. The building names and year of construction are listed in Table 4.5-2.

a. California Register of Historic Resources

This report surveyed documents and incorporated additional research and site observations in order to assess whether the RAAP is eligible to the CRHR. The following analysis provides a summary of eligibility for the RAAP site under each required CRHR criterion.

i. Criterion 1 (History)

The RAAP began its life as an aluminum plant in 1943. The initial purpose of the plant was to supply the United States with desperately needed aluminum for the production of airplanes. This came at a time when California and the Pacific coast were just beginning to obtain the manufacturing capabilities which had previously resided exclusively in the East. The RAAP site is thus associated, not only with World War II, but also with the rapid industrialization of California, a process responsible for the 130 percent increase in California's population that occurred between 1940 and 1946.

The RAAP, however, was only a small part of this industrial boom. While only one other aluminum plant, Vernon Works in southern California, was in operation at the time, there were many other military and industrial production facilities throughout the State which remain, in some form, today. Having been the largest shell casings plant at the time, the RAAP is also linked to the Korean War; however, as the site was not developed specifically

TABLE 4.5-2 **RAAP SITE PROPERTIES ELIGIBLE FOR NRHP LISTING**

Structure	Year Built
Blanking Plant 7 Furnace Building	1953
Boiler House	1942
Building 120	1951
Building 120 A	1953
Carbon Rodding Building	1942
Communications Building	1971
Firehouse	1942
Garage	1954
Gate House 7 Cafeteria	1942
Machine Shop 9	1942
Materials Service Building, Press Room	1942
Ore Unloading Building	1948
Paint Spray Building	1978
Pot Room For Aluminum Production	1942
Rectifier Station, Production Line	1942
Riverbank Army Ammunition Plant	1942
Terminal House	1942
Transformer Service Building	1942
Unloading 7 Shipping Building	1942
Washroom 7	1942
Water Well	1942

Source: Knapp Architects, 2009.

for use in the Korean War, the connection is not as strong as it would otherwise be. Although it is possible that the site is significant for this association, previous reports did not mention a strong connection.

The Vietnam War, while it occurred less than 50 years ago is arguably already a significant historic event worthy of recognition. However, while the RAAP supplied ammunition for the Vietnam War, it is in no other way linked to the war. In summary, the property may be eligible to the CRHR for its association with munitions manufacturing, but its association with three wars, change of use, and growth by accretion significantly complicate any such determination. California housed extensive arms manufacturing plants over the same period, making it likely that this plant would be significant only at the local level, if at all.

The eligibility criteria state that a site must be considered significant under Criterion 1 (history), Criterion 2 (persons), Criterion 3 (design), or Criterion 4 (potential to yield information); possess integrity; and be classified as a building, structure, object, site, or district.

ii. Criterion 2 (Persons)

Research into the site's history has uncovered no significant persons associated with the RAAP, and thus the property does not appear eligible under this criterion.

iii. Criterion 3 (Design)

The RAAP is significant in that it is an example of industrial architecture in an area where agriculture and residence dominate. Features such as high, open interior spaces, steel-frame and corrugated steel construction, and gravity vents in roofs set it apart from its surroundings. The density, extent, and visual prominence of utilities, systems, and service structures outside the buildings themselves bolster this characteristic. No single building or object on the site appears to be individually significant; Buildings 1-6 are striking in plan, but were not unusual enough even at their completion to be significant on their own.

The property qualifies as a district, significant as an industrial design for a large manufacturing facility, and notable for its setting in a primarily agricultural and residential area. The size, form, scale, materials, and design of the individual buildings illustrate important trends in 20th century heavy manufacturing, and the layout of the site, along with its highly visible utilities, exposed systems, and machinery convey important design and technological trends from the period of significance.

While the RAAP originally had a much larger site, the district's potential boundaries would be formed by the buildings and the roads, rail lines, and parking which served them. Some features associated with the plant from the period of significance, such as the non-contiguous site next to the Stanislaus River where the leaching ponds, and outlying portions of the Claus Road site, do not contribute to the significance of the district because they are not identifiable features of manufacturing plant design. While the Hetch Hetchy power lines in the northern, undeveloped portion of the RAAP Site are strongly associated with the RAAP manufacturing buildings, they are far enough away from the manufacturing buildings so that they do not contribute to its significance as an example of design of heavy manufacturing plants.

The boundaries of the district would be as follows:

- **West.** Claus Road;
- **South.** Parallel to Claribel Road, but about 300 feet north of it, enclosing the south perimeter roadway and the grouping of Buildings 137 and 139;
- **East.** The east property line of the site; and
- **North.** A line enclosing Buildings 76 and stepping north to take in 182 and 192, then running diagonally along the northwest side of the rail line to a point roughly aligned with the north end of Building 122, then east to Claus Road.

iv. Criterion 4 (Potential to Yield Information)

Although the RAAP has always been unique in its locality, it fits well into the historic context of the time period in which it was originally constructed. World War II brought a sudden demand for the products of large-scale industry, and, accordingly, factories began being built across the west coast to meet these new demands. RAAP was one of nine aluminum plants to be federally funded in 1942, and helped fuel the industrial revolution that took place as the United States struggled to keep up the war effort.

Thus, while the RAAP is part of a large-scale change in California that has numerous other notable remnants, it remains significant at a local level, where fewer examples of such industry exist.

v. Historical Integrity

As the RAAP has not moved, it retains integrity of location. Although Riverbank has grown over the years, it has remained a relatively small town still surrounded by agricultural land despite its recent trend toward suburban transformation.

Furthermore, the RAAP, being on the edge of town, has seen little of this change and retains integrity of setting. The facilities at RAAP are in good working order and most of the buildings' the materials appear original and intact, meaning that the site retains integrity of materials. It should be noted, however, that a property can retain integrity of materials and workmanship even if costly repairs are needed for a new use.

As new facilities were added to the site, the layout of the plant changed from its original design. Buildings were reused for purposes different than their original intent, and open spaces were gradually filled in to create walkways connecting Buildings 1-6.

Despite these changes, the buildings remain decidedly industrial, and the site is still easily recognizable as an industrial facility. Thus, RAAP retains integrity of design with respect to its period of significance. Although the facility

has been retrofitted several times and facilities have been added, the original construction, consisting of brick and steel-frame buildings with high open roofs still remains. Changes that have been made over the years somewhat diminish the integrity of workmanship, but overall, it remains intact.

The fact that some of the original buildings and equipment are gone means that the site has difficulty communicating its original use (aluminum production), but it is still capable of communicating a sense of large-scale industry associated with its later use of munitions manufacturing. Thus, RAAP retains integrity of feeling.

The fact that much of the original machinery is missing somewhat diminishes the site's integrity of association, as it is much more difficult to perceive the facility's original use. The presence, however, of most of the original buildings in the original layout, as well as features such as the tracks used for transporting transformer to and from the transformer repair building, aid the integrity of association. Although it is diminished, the integrity of association is still intact.

Overall, this report concludes that the RAAP is eligible to the CRHR as a district, significant locally as an example of the design of heavy manufacturing plants. The size, form, materials, and design of the buildings exemplify design of manufacturing plants from the period of significance. The many pipes, service buildings, free-standing machines, roads, and rail lines which form a highly visible network of infrastructure for the buildings are also highly characteristics of a heavy production facility. The period of significance is from 1942 to 1958, encompassing the World War II and Korean War eras. The district encompasses the buildings, roads, and rail lines developed during the period of significance, but does not include the entire Claus Road site. The non-contiguous site adjacent to the Stanislaus River is not included in the district.

The RAAP appears eligible to the CRHR as a historic district; it is significant at the local level under Criterion 3 for its significance in design of manufacturing facilities within the context of industrial architecture. Although the

site has changed since the period of significance, it retains historical integrity. Figure 4.5-1 is a diagram of the buildings and areas that belong to the historic district.

b. Other Historic Resources

The Riverbank Branch Library is the only structure in Riverbank listed under the National Register of Historic Places as a Multiple Property Submission (MPS) under the California Carnegie Libraries. The Riverbank Branch Library, listed in 1996, is one of 142 Carnie Libraries built in California.

The E Clampus Vitas (Chapter No. 58), a fraternal organization dedicated to the study and preservation of Western Heritage, has erected three monuments in the City of Riverbank marking historic places, people, or structures:

- **Site No. 3.** Burnville, 1867 settlement by Major James Burney, corner of Highand First Streets.
- **Site No. 13.** Statue of Justice, Justice Court, courthouse east wall.
- **Site No. 27.** Riverbank Historical Museum, Santa Fe Avenue.

C. Standards of Significance

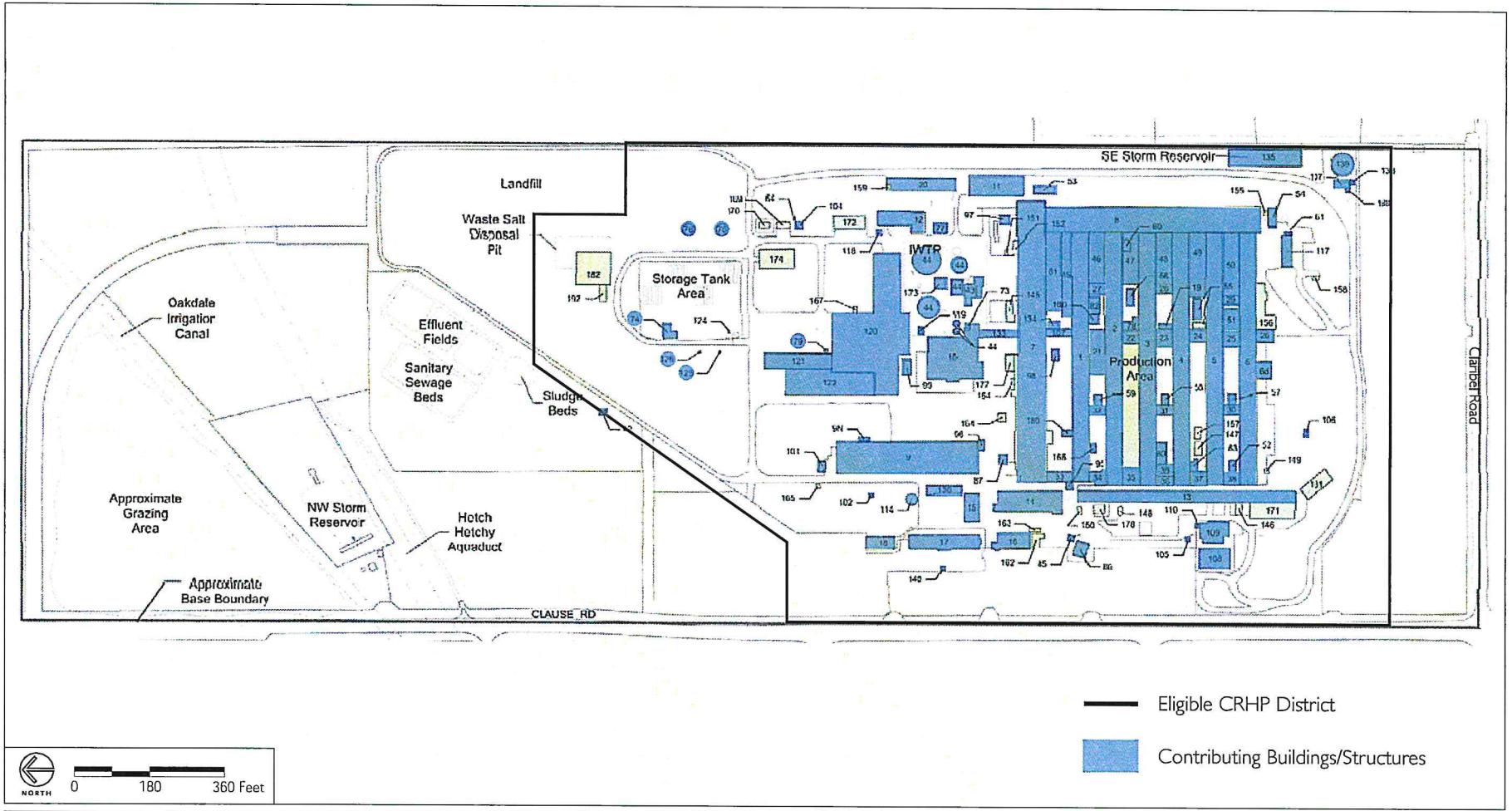
The draft RAAP Site Specific Plan would have a significant cultural resource impact if it would:

a. Cause a substantial adverse change in the significance of a historical resource.

b. Cause a substantial adverse change in the significance of an archaeological resource.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

d. Disturb any human remains, including those interred outside of formal cemeteries.



Source: KNAPP Architects.

FIGURE 4.5-1
ELIGIBLE CRHP HISTORIC DISTRICT

D. Impact Discussion

The following discussion provides an analysis of potential project and cumulative cultural resource impacts that could occur as a result of implementation of the draft RAAP Site Specific Plan.

1. **Project Impacts**

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

As described above, a series of evaluations commissioned by the US Army determined that the RAAP property is not eligible for inclusion on the National Register of Historic places. However, the Historic Resources Assessment conducted for the Plan determined that a portion of the Plan Area is eligible for inclusion on the CRHR as a district, as it is significant locally as an example of the design of heavy manufacturing plants. This eligible district, shown in Figure 4.5-1, encompasses the buildings, roads, and rail lines developed between 1942 and 1958.

The eligible district currently retains a high degree of historic integrity and the Plan recommends that the associated buildings and other elements be retained as they are now. The draft Specific Plan does allow additional buildings and modifications to existing buildings in this area, with restrictions in place to protect historical resources and preserve the viability of this area for future heavy industrial uses. Additional landscaping is also recommended for this area in the draft Specific Plan, both for improved aesthetics and to implement principles of low-impact development (LID). It is anticipated that new development in this area would be of a similar character to existing development and range from one to two stories. Additionally, the Riverbank General Plan includes the goals and policies listed in Table 4.5-1 which would protect buildings within the eligible the district from substantial adverse changes in historical significance. These policies include General Plan Policies CONS-1.1, which prohibits the modification of historically significant buildings in a way that affects their historic value, and CONS-1.3, which promotes and encourages reuse of historic buildings consistent with other basic considerations.

The draft Specific Plan includes policies to protect the historic character of the RAAP site, but the draft Specific Plan does not propose to designate a historic district within the RAAP site, nor does the City of Riverbank intend to pursue such a designation. As the draft Specific Plan is implemented, existing structures may be demolished or altered to allow for future uses within the RAAP site. Although the draft Specific Plan policies will seek to protect the historic character of the site, because the draft Specific Plan will allow for the demolition or alteration of buildings within an area that is eligible to be listed on the CRHR, a *significant impact* would occur.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

There are no known archaeological resources in the RAAP Plan Area and a records search of files at the CCIC indicated there are no recorded prehistoric cultural resources in Riverbank. However, previous archeological investigations have been limited in scope and, given that prehistoric and historic settlements in the central valley were generally established along rivers, the banks of the Stanislaus River are considered archeologically sensitive. Therefore, it is possible that as yet undiscovered archeological resources are present in the RAAP Plan Area.

Because the Plan Area is already largely developed, it is unlikely that as yet undiscovered archaeological resources. If present in the Plan Area, undiscovered archaeological resources would be disturbed as a result of Plan implementation. Additionally, the Riverbank General Plan includes goals and policies listed in Table 4.5-1 above, which would serve to reduce any potential impacts to archaeological resources. These policies include Policies CONS-2.1, CONS-2.2, CONS-2.4, and CONS-2.5. Consequently, impacts to archaeological resources resulting from implementation of the Plan would be *less than significant.*

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

There are no known paleontological resources in the RAAP Plan Area and a records search of files at the CCIC indicated there are no recorded prehistoric cultural resources in Riverbank. Because the Plan Area already largely developed, it is unlikely that as yet undiscovered paleontological resources, if present in the Plan Area, would be disturbed as a result of Plan implementation. Additionally, Policy CONS-2.1 from the Riverbank General Plan requires that approved plans incorporate measures to reduce or eliminate impacts to known or unknown paleontological resources. Therefore, compliance with General Plan policies would ensure that impacts to paleontological resources and unique geologic features associated with Plan implementation would be *less than significant.*

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Human remains dating to the prehistoric period of California have been located at numerous locations along rivers and streams within the San Joaquin Valley, although there are no known prehistoric human remains in the vicinity of Riverbank. Nevertheless, given that prehistoric and historic settlement has generally occurred along rivers, the possibility that as yet undiscovered human remains are present in the RAAP Plan Area remains.

California Law and the Riverbank General Plan recognize the need to protect interred human remains, particularly Native American burials and related items of patrimony, and have established procedures for the treatment of discovered remains. The California Health and Safety Code and Riverbank General Plan Policy CONS-2.5 require that if human remains are inadvertently discovered during excavation or construction activities, all construction affecting the discovery site halt, the contractor contact the appropriate City agency, and the county coroner examine the remains within 48 hours of discovery. Additionally, if the remains are determined to be those of a Native American, the City agency will work with local Native American representatives to insure that the remains and associated artifacts are treated in a respect-

ful and dignified manner. Therefore, compliance with State law and local policy would ensure that impacts associated with disturbance of human remains from implementation of the Plan would be *less than significant.*

E. Cumulative Impacts

Cumulative impacts to cultural resources would occur when a series of actions leads to the loss of a substantial type of site, building, or resource. For example, while the loss of a single historic building may not be significant to the character of a neighborhood or streetscape, continued loss of such resources on a project-by-project basis could constitute a significant cumulative effect. This is most obvious in historic districts, where destruction or alteration of a percentage of the contributing elements may lead to a loss of integrity for the district overall. Changes to the setting or atmosphere of an area, for example, by adding modern structures on all sides of a historically significant building, thus altering the aesthetics of the streetscape, would create a significant impact. Destruction or relocation of historic buildings would also significantly impact the setting. The geographic scope of this analysis is the RAAP Plan Area and immediate surrounding area.

The Plan Area is separated from surrounding properties by a fence, such that it is self-contained. Alteration of structures or features would therefore not affect adjacent neighborhoods or the atmosphere and setting of the surrounding area. The district within the RAAP Plan Area identified as eligible for inclusion on the CRHP is not proposed to be altered by the Plan. Instead, the draft Specific Plan does allow additional buildings and modifications to existing buildings in this area, with restrictions in place to protect historical resources and preserve the viability of this area for future heavy industrial uses. Additionally, compliance with Riverbank General Plan Policies CONS-1.1 and CONS-1.3, described above, would protect the district. Therefore, in combination with past, present and reasonably foreseeable projects in surrounding area, implementation of the proposed Plan would not result in a cumulative impact to cultural resources. Impacts would be *less than significant.*

F. Impacts and Mitigation Measures

Impact CUL-1. Implementation of the RAAP Specific Plan would alter the significance of an historic resource. By removing individual structures that contribute to the eligibility of an historic district, the RAAP's ability to convey its importance to local and national history is significantly altered, the resource may not be eligible for inclusion on the CRHR.

Mitigation Measure CUL-1: Prior to the demolition of buildings and structures comprising the eligible district, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation shall be conducted for the affected structures. HABS/HAER recordation could include archiving of original plans, undertaking archival research for preparation of a report, making measured drawings, and completing a photographic study of the structures.

Significance after Mitigation: *Significant and unavoidable.* HABS documentation and interpretive display would lessen the impact to the eligible district by preserving construction information, providing a photographic record of the district and its contributors, and providing archival access to the public. However, demolition of a historical resource cannot be mitigated to a less-than-significant level.

4.6 GEOLOGY AND SOILS

This chapter discusses existing geology, soils, and seismic conditions in the Plan Area and evaluates the potential impacts associated with buildout of the Plan.

A. Regulatory Framework

This section summarizes applicable State and local policies and regulations regarding geology, soils, and seismicity.

1. State Laws and Regulations

a. The Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act[1] was passed by the California Legislature in 1972 to mitigate the hazards of surface faulting to structures. The main purpose of the Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards, such as ground shaking or landslides.[2]

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and to issue maps to all affected cities, counties, and State agencies for use in planning and controlling development. Local agencies must regulate most development projects within the zones. Construction is generally prohibited within 50 feet of an active fault zone.[3] Currently, the California Department of Conservation's Geological Survey (CGS) does not include Riverbank on its list of cities affected by Alquist-Priolo Earthquake

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[1] Called the *Alquist-Priolo Special Studies Zones Act* until renamed in 1993.

[2] California Geological Survey, Alquist-Priolo Earthquake Fault Zones, http://www.consrv.ca.gov/CGS/rghm/ap/, accessed on December 23, 2009.

[3] California Geological Survey, Alquist-Priolo Earthquake Fault Zones, http://www.consrv.ca.gov/CGS/rghm/ap/pages, accessed on December 23, 2009.

Fault Zones[4] and the City is not located within an earthquake fault zone as designated by the Alquist-Priolo Act.[5]

b. Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690-2699.6) addresses seismic hazards other than surface fault rupture, including liquefaction and seismically induced landslides. Implementation of this Act by the Department of Conservation requires Seismic Hazard Zones be mapped by the State Geologist to assist local governments in land use planning. The Department of Conservation has determined that the City of Riverbank is not affected by a Seismic Hazard Zone.[6]

c. International Building Code, 2006 Edition

The International Building Code was developed by the International Conference of Building Officials to provide a set of consistent standards for building structures. The Code requires strict building standards for essential facilities and for sites on soft soil where shaking intensity from a potential earthquake is increased.

The Uniform Building Code (UBC), the predecessor of the International Building Code, was last adopted as Title XV of Chapter 150 of the Code of the City of Riverbank in 1992. The UBC, now known as the International Building Code (IBC), is the Building Code for Riverbank and regulates all building and construction projects within the city. All developments in Riverbank applying for a permit are subject to the IBC.

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[4] California Geological Survey, Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones, http://www.consrv.ca.gov/cgs/rghm/ap/Pages/affected.aspx, accessed January 25, 2010.

[5] City of Riverbank, 2005. *General Plan DEIR 2005-2025*, page 4.8-7.

[6] California Geological Survey, Northern California cities and counties affected by SHMP Zones, http://www.conservation.ca.gov/cgs/shzp/Pages/affected.as- px, accessed January 25, 2010.

d. California Building Code

Statewide, California has adopted mandatory codes based on the International Code Council's Uniform Codes. These are compiled the 2010 California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code or California Building Code (CBC). The CBC is based on the 2006 International Building Code and combines three types of building standards from three different origins:

- Building standards that have been adopted by State agencies without change from building standards contained in the International Building Code.
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions.
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

When no other standards apply, the CBC provides Riverbank with a minimum standard for building design and construction. The 2007 update to the CBC reflects significant changes in design and construction requirements relating to structural safety. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading, drainage and erosion control activities.[7]

Through the CBC, the State provides a minimum standard for building design and construction. Seismic zone designations range from zone 0 to zone 4. The ascending numbers indicate the respective increase in the required factor of safety applied to structural design equations for resisting earthquake-induced ground accelerations. The City of Riverbank is in CBC Seismic Zone 3, and consequently, construction within the city is required to meet all applicable building code standards for CBC Zone 3.

[7] California Building Standards Commission, 2002. *2001 California Building Standards Administrative Code California Code of regulations, Title 24, Part 1.*

The earthquake protection law, established in California Health and Safety Code Section 19100 et seq., requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum standards for seismic safety and structural design to meet earthquake protection requirements are set forth in Chapter 16 of the CBC.

2. Local Policies

a. City of Riverbank General Plan

Table 4.6-1 lists the goals and policies from the City of Riverbank General Plan 2005-2025 that relate to geology and soils.

b. Riverbank Municipal Code

Title XV, Chapter 155, of the City of Riverbank Municipal Code establishes procedures, permits, and other requirements for grading, excavation, and filling activities within the city. An important goal of these procedures and requirements is to protect public health and safety and aesthetics through regulating the development of potentially hazardous terrain; minimizing water quality, air quality, and stormwater impacts; reducing propagation of noxious weeds; and conserving the aesthetic value of the grading site and surrounding properties.

Sections 152.140 to 152.143 of the City of Riverbank Municipal Code require that subdividers submit a preliminary soil report, prepared by a state-registered civil engineer or soil engineer, prior to the submission of the final subdivision map. If the preliminary soil report indicates the presence of critically expansive soils or other soil problems on the site, a soil investigation must be prepared by a state-registered civil engineer. The soil investigation must include a recommendation of corrective action to prevent structural damage in the subdivision. The City Council may approve the subdivision and its building permit conditioned upon the incorporation of the approved recommended corrective action.

TABLE 4.6-1 **RIVERBANK GENERAL PLAN GOAL AND POLICY RELATED TO GEOLOGY AND SOILS**

Goal/Policy Number	Goal/Policy Content
Goal SAFE-1	**Minimize the loss of life and damage to property natural and human-caused hazards.**
Policy SAFE-1.2	The City will continue to enforce State of California Building Standards Commission uniform codes, such as the Uniform Building Code and Fire Code.
Policy SAFE-1.11	Proposed developments located within river bluff areas and other areas prone to geologic and soil limitations require a detailed geotechnical study prepared by an independent qualified geologist approved by the City. Approved plans, projects, and subdivision requests shall incorporate measures to reduce risks identified in the geotechnical study, to the City's satisfaction.
Policy SAFE-1.12	The City will not allow the location of water wells in areas where subsidence could occur as a result or where existing potential for subsidence could be increase as a result of operation of a domestic water well.

Source: City of Riverbank General Plan 2005-2025.

B. Existing Conditions

This section discusses the existing conditions pertaining to geology and soils in the Plan Area.

1. Geologic Setting

The City of Riverbank and the Plan Area are located in northern San Joaquin Valley, the southern of the two valleys that comprise California's Great Central Valley. The Great Central Valley is an alluvial plain, approximately 50 miles wide and 400 miles long, located in central California.[8] For the past two million years in the Great Central Valley, eroded sediments from the Coast Range of mountains to the west, and the Sierra Nevada mountain range

[8] United States Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-38.

to the east, have deposited in the Valley floor. The oldest and deepest sediments found in the Great Central Valley are of volcanic origin, and other sediments have been found to originate from granite rock, pale quartz, and feldspar sand.[9]

At the Plan Area, the subsurface geology is locally known as the Riverbank Formation and consists of unconsolidated Pleistocene non-marine sedimentary deposits. Also found in the subsurface are Aromas Red Sands, which are cross-bedded colored sands, ranging from gray to brown and yellow to red. These sands are locally pebbly with minor percentages of clay and silt. There are subsurface strata at the RAAP site comprised of hundreds of feet of interlayered fluvial deposits, including sand, clays, and gravels. There are clay layers in the subsurface, and clay strata at the following intervals: 100 to 110, 70 to 80, and 10 to 40 feet below the surface.[10]

2. Geologic Hazards

a. Surface Fault Rupture

California is a seismically active region; seismic activity is concentrated in tectonically active regions, such as the Pacific Coast, the Sierra Nevada Range, and the Cascade Range. The active tectonism in these regions is due to plate tectonics and movements of the earth's tectonic plates, and resulting active volcanism.

In accordance with the Alquist-Priolo Earthquake Fault Zoning Act of 1972 (A-P EFZ), only faults with evidence of historic or Holocene surface fault rupture are considered "active" earthquake faults and zoned on the A-P EFZ maps. Faults with evidence of surface fault rupture within the past 1.6 million years are considered potentially or conditionally active.

The A-P EFZ maps show faults considered active by the California Geological Survey (CGS). The City of Riverbank and the Plan Area are not located

[9] City of Riverbank. *General Plan 2005-2025 DEIR,* page 4.8-1.

within an Alquist-Priolo Earthquake Fault Zone and is not included on an A-P EFZ map (California Geological Survey 2005). Therefore, the Riverbank area is not susceptible to seismic hazards related to fault rupture.[11] However, a 7-mile portion of Ortigalita fault, which is located in the southwestern portion of Stanislaus County, has been identified as an A-P EFZ. It has been approximately five million years since the most recent rupture of the Ortigalita fault, and earthquake activity without surface fracturing or faulting is a common occurrence.[12]

It is possible that seismic activity in other parts of the state can affect the Riverbank area depending on strength and intensity of the seismic event. The strength of an earthquake may be expressed as its magnitude, commonly measured on the Richter scale, and its intensity, as ranked on the Modified Mercalli Intensity Scale. The Richter scale magnitude is a measure of the energy released at the focus of the earthquake and the Modified Mercalli Scale measures the intensity on a scale of I to XII of ground shaking as determined from observations of an earthquake's effect on people, structures and the earth's surface.

The discussion below presents prominent faults that could produce seismic activity in the Riverbank area.

- **San Andreas Fault**. The San Andreas Fault is the dominant influence on local geology and seismic potential. At its closest point, the fault lies about 70 miles west of the Plan Area. The San Andreas is a slip-strike fault, meaning that the Earth's crust on either side of the fault is slipping past the other in a horizontal motion. Historic earthquakes confirm that the San Andreas Fault, as well as well its eastern branches, the Calaveras and Hayward Faults, remains highly active today. The CGS and United

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[10] US Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-38.

[11] City of Riverbank. *General Plan 2005-2025 EIR*, page 4.8-7.

[12] City of Riverbank. General Plan Background Report, Safety, page SAFETY-2.

States Geological Survey (USGS) have defined segments of the San Andreas Fault based on the size and recurrence interval of earthquakes associated with each. At its closest point, the San Andreas Fault lies approximately 85 miles west of the Plan Area.

- **Hayward Fault.** The 53-mile Hayward Fault runs parallel to the eastern side of the San Francisco Bay, roughly from the San Pablo Bay in the north to the City of San Jose in the south. The Hayward Fault has generated one large historical earthquake, an event in 1868 of approximately 8.6 magnitude. The Fault is considered likely to produce a 6.9 to 7.1 magnitude earthquake in the future, with a recurrence interval of 210 years.

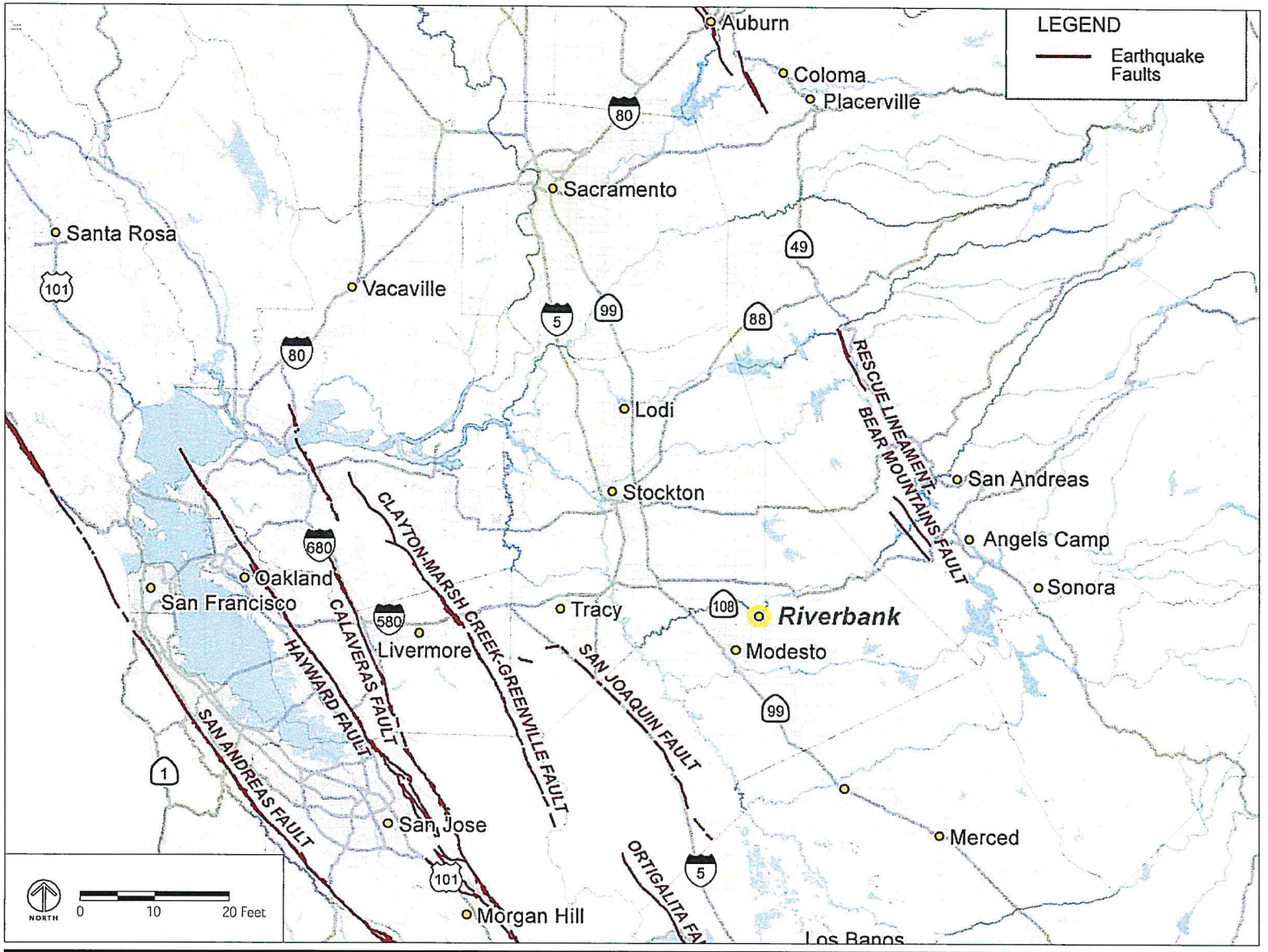
As shown in Figure 4.6-1, less prominent fault systems in proximity to the City of Riverbank and the Plan Area include the Ortigalita Fault, San Joaquin Fault, Rescue Lineament – Bear Mountains Fault, Clayton – Marsh Creek – Greenville Fault, and the Calaveras Fault.

b. Seismically Induced Ground Shaking

Fault activity has the potential to result in ground shaking. Any slip along all or part of a fault surface releases accumulated energy that radiates in all directions away from the source, in the form of earthquake waves. Associated ground shaking varies in intensity depending on the severity of earthquake activity, proximity to that activity and local soil and geological conditions.

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including seismically induced ground shaking and other seismic hazards. Areas within Stanislaus County, including the City of Riverbank and the Plan Area, have not been mapped as part of the Seismic Hazards Mapping Act. However, prominent faults such as the San Andreas Fault and the Hayward Fault will likely produce earthquakes sometime in the future which may result in ground shaking in the Riverbank area.

According to the US Geological Survey (USGS) Probabilistic Seismic Hazard Assessment Program, the Plan Area is considered to be within an area



Source: City of Riverbank General Plan EIR.

FIGURE 4.6-1

FAULT LINES IN THE PROJECT AREA

that is predicted to have a 90 percent probability of an earthquake of magnitude greater than 5.0 in the next 100 years and a 70 percent probability of an earthquake of a magnitude greater than 5.0 in the next 50 years.[13] The USGS has also furnished information to Stanislaus County that the eastern half of the County, including Riverbank and the Plan Area, is expected to experience seismically induced ground shaking at an intensity of VI or VII on the Modified Mercalli Intensity Scale.[14]

The USGS Earthquake Database lists earthquakes occurring within 30 miles of the Plan Area from the following years: 1866, 1932, 1943, 1944, 1945, 1946, 1948, 1949, 1950, 1951, 1952, 1954, 1955, 1957, 1958, 1959, 1960, 1961, 1963, 1966, 1971, 1973, 1974, 1976, 1977, 1987, 1990, 1991, 1994, 1996, and 2002. The greatest magnitude earthquake occurring within 30 miles of the Plan Area occurred in 1866 and had an epicenter approximately 25 miles from RAAP and a magnitude of 5.80. The greatest-magnitude earthquake occurring within 30 miles of RAAP since 1866 occurred in 1994 and had a magnitude of 4.1. This earthquake was also epicentered approximately 25 miles from RAAP.[15]

c. Soil Liquefaction

Liquefaction is a process in which uniform, clean, loose, fine sandy, and silty sediments below the water table temporarily lose strength during an earthquake and behave as a viscous liquid rather than a solid. Liquefaction is restricted to certain geologic and hydrologic environments, primarily recently deposited sand and silt in areas with high groundwater levels.

Liquefaction can cause the soil beneath a structure to lose strength, which may result in the loss of foundation-bearing capacity. This loss of strength commonly causes the structure to settle or tip. Loss of bearing strength can

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[13] US Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-40.

[14] City of Riverbank. *General Plan Background Report,* Safety, page SAFETY-2.

[15] US Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-40.

also cause light buildings with basements, buried tanks, and foundation piles to rise buoyantly through the liquefied soil.

Impacts from liquefaction have the potential to occur in and around Riverbank, including in the Plan Area. The alluvial soils in the Riverbank area, which are discussed in detail below, have the potential to become water-saturated when the groundwater table is high. Consequently, interstitial spaces between individual grains of sediment become logged with water, and potentially lose contact with each other. Without contact or friction, grains of sediment can lose strength and behave like a liquid, particularly in a seismic event.[16]

d. Landslides and Slope Instability

Landslides and slope instability are characterized by the movement of soils and surficial deposits, known as colluvium, and bedrock down steep slopes. This movement results from wet weather, adverse structures, seismic shaking, and/or improper grading and drainage. The Riverbank area, including the Plan Area, is generally level. Elevation in the Riverbank area ranges from 75 feet above mean sea level at the southern bank of the Stanislaus River to 150 feet above mean sea level at the eastern city limit. The average elevation in the Plan Area is 135 feet above mean sea level. Terrain at the RAAP site is basically level but slopes southwestward at a rate of 25 feet per mile.[17]

There is one significant ridge in Riverbank. Varying from 10 to 30 feet high, this ridge is located along the southern edge of the Stanislaus River and north of the existing developed portion of the City of Riverbank. Aside from this ridge, landslides and slope instability are not environmental concerns for the City of Riverbank or the Plan Area.

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[16] US Geological Survey (USGS), *About Liquefaction*, http://geomaps.wr.usgs.gov/sfgeo/liquefaction/ aboutliq.html, accessed January 28, 2010.

[17] US Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-38.

3. Soils and Soil Hazards

The soils in Riverbank have been significantly influenced by the Stanislaus River. Most soils in the Riverbank area are found in alluvial fans and within the floodplain of the Stanislaus River. The Soil Survey for Eastern Stanislaus County was published by the National Resource Conservation District (NRCS) in 1964.[18] Within the Riverbank area, the Soil Survey reports 23 distinct soil series, or soils with similar characteristics such as color, texture, structure, reaction, consistency, mineral, chemical composition, and arrangement in the profile. Table 4.6-2 lists the soil series found in Riverbank, the general characteristics of each series, and the slope percentage at which a series is likely to occur.

There are two soil series found on the RAAP site, the San Joaquin Series (SaA) and the Madera Series (MdA). The San Joaquin Series is characterized by moderately coarse, reddish-brown to brown, well-draining, slightly to moderately acidic soils. This series is composed of silica and iron that forms hardpans. Between 41 and 76 cm deep, a red to reddish-brown clayey subsoil rests on the hardpan. The Madera series is characterized by medium to moderately coarse sediments that are well-draining. On the surface, soils in the Madera series are commonly neutral to brown colored loams, or sandy loams. The subsoil is reddish-brown to brown sand clay that rests on an iron and silica hardpan with seams of lime. Below the hardpan is a compact, stratified sandy loam that can be weakly cemented in certain areas.[19]

The potential for soil hazards, specifically erosion, subsidence, and expansive soils in Riverbank is discussed below.

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[18] Arkley, Rodney J., United States Department of Agriculture Soil Conservation Service, 1964. *Soil Survey, Eastern Stanislaus Area, California.*

[19] US Army, 2009. *Final Environmental Assessment for BRAC 05 Disposal and Reuse of Riverbank Army Ammunition Plant, California*, page 4-39.

TABLE 4.6-2 **SOIL SERIES FOUND IN RIVERBANK**

Soil Series	Description	Slope Percentage
CaA	Chualar sandy loam	0 to 3
DeA	Dehli loamy sand	0 to 3
DeB	Delhi loamy sand	3 to 8
DhA	Delhi sand	0 to 3
DhB	Delhi sand	3 to 8
GfA	Grangeville fine sandy loam	0 to 1
GmA	Grangeville very fine sandy loam	0 to 1
GsA	Greenfield sandy loam	0 to 3
GvA	Greenfield sandy loam, deep over	0 to 3
HbA	Hanford fine sandy loam	0 to 3
had	Hanford sandy loam, moderately deep over silt	0 to 1
HdsA	Hanford sandy loam, deep over silt	0 to 1
HfA	Hilmar loamy sand	0 to 1
MdA	Madera sandy loam	0 to 2
MmA	Modesto clay loam	0 to 1
OaA	Oakdale sandy loam	0 to 3
SaA	San Joaquin sandy loams	0 to 3
SnA	Snelling sandy loam	0 to 3
TuA	Tujunga loamy sandy	0 to 3
Tx	Terrace escarpments	-
WmC	Whitney sandy loams	8 to 15
WrA	Whitney and Rocklin sandy loams	0 to 3

Source: City of Riverbank General Plan 2005-2025 DEIR, pages 4.8-1 to 4.8-2.

a. Erosion Potential

Erosion generally happens when natural forces, such as water and/or wind, loosen, dissolve, and wear away at the surface of the earth. Erosion may contribute to a significant loss of soil, or produce sedimentation that degrades water quality. In and around Riverbank, including within the Plan Area, water erosion is of moderate to low concern because the topography of the area is largely flat and the soils are mostly well-draining. The potential for wind erosion in Riverbank is moderate to high in the summer, fall, and springtime, when prevailing winds push marine air through the Carquinez Straight, a sea-level gap in the Coastal Range mountains located 70 miles west to northwest of the City of Riverbank. In wintertime, winds generated in the Carquinez Straight area are decreased and the potential for wind erosion in Riverbank is low.

b. Subsidence Potential

Subsidence occurs after a drainage event, when soil organic matter shrinks as a result of drying out or oxidation. The NRCS Soil Survey reports that subsidence is uncharacteristic of the soil series found in Riverbank, and therefore is not of concern. At this time, there is no evidence of subsidence within Riverbank or the Plan Area. Subsidence is discussed further in Chapter 4.9, Hydrology and Water Quality, of this EIR.

c. Expansive Soils

Expansive soils have a "shrink-swell potential," meaning they are known to shrink when dry and swell when wet. If the expansiveness of a soil is rated by the NRCS as moderate to high, then buildings, roads, and other structures may incur significant damage as a result of a shrinking or swelling event. Specific building techniques have been developed, and are often required, for construction in areas with expansive soils.

Expansive soils are a significant concern for the City of Riverbank and in the Plan Area. The NRCS identifies the majority of the Riverbank area soils, and the Plan Area soils altogether, as expansive. Of the 23 soil series known to occur within the Riverbank city limit, four are identified as expansive. Table

4.6-3 lists the expansive soils within the city, the potential for their expansion, and the soil depth at which that expansion potential is known to occur. Two of the four expansive soils series found in the Riverbank area occur on the RAAP site, the Madera (MdA) and the San Joaquin (SaA) series. The soils on the northern portion of the RAAP Site belong to the SaA series, which is considered to have a high expansion potential at 13 to 24 inches below the surface. The soils on the southern portion of the RAAP Site belong to the MdA series, which is considered to have high expansion potential at a depth of 19 to 30 inches.

C. Standards of Significance

The proposed project would have a potentially significant geology and soils impact if it would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
   - ♦ Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
   - ♦ Strong seismic ground shaking.
   - ♦ Seismic-related ground failure, including liquefaction.
   - ♦ Landslides, mudslides or other similar hazards.

b. Result in substantial soil erosion or the loss of topsoil.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

d. Be located on expansive soil, creating substantial risks to life or property.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.

TABLE 4.6-3 **EXPANSIVE SOILS FOUND IN RIVERBANK**

Soil Series	Shrink-Swell Potential
Snelling (SnA)	Moderate potential at depth of 19-56 inches
San Joaquin (SaA)	High potential at depth of 13-24 inches
Modesto (MmA)	Moderate potential at depths of 0-12 and 35-55 inches
	High potential at depths of 12-35 inches and 55-62 inches
Madera (MdA)	High potential at depth of 19-30 inches

Source: City of Riverbank General Plan 2005-2025 EIR, page 4.8-5.

D. Impact Discussion

1. Plan Impacts

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

As described above, the Plan Area is not located within an Alquist-Priolo Earthquake Fault Zone and is not located on an active fault as designated by the California Geological Survey (CGS). The Plan Area is located more than 70 miles to the east of both the San Andreas and Hayward Faults, the two most prominent fault lines in the region, and approximately 37 miles northeast of the Ortigalita Fault, which is identified as active by the CGS. Therefore, the Plan Area is not considered susceptible to the risk of loss, damage, or death involving fault rupture. Associated impacts would be *less than significant.*

ii. Strong seismic ground shaking.

Given the likelihood of earthquakes along the prominent faults in the region and the proximity of those faults to the Plan Area, seismic ground shaking is possible within the Plan Area in the event of a major earthquake. However,

pursuant to General Plan Policy SAFE-1.2 and Riverbank Municipal Code, the standards for seismic safety and structural design established in the California Building Code would apply to construction in the Plan Area, thereby ensuring adequate earthquake protection. Therefore, with continued implementation of General Plan policies, including Policy SAFE-1.2, buildout of the Plan would result in a *less-than-significant* impact related to the risk of loss, damage, or death involving seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction.

Alluvial soils in the Plan Area can potentially become saturated when the groundwater table is high, which increases their susceptibility to liquefaction during a seismic event. However, the California Building Code, applicable in Riverbank pursuant to General Plan Policy SAFE-1.2, establishes standards for seismic design, foundations, and drainage. Continued implementation of this policy and compliance with State of California uniform codes would ensure that the risk of loss, damage, or death from seismic related ground failure is *less than significant.*

iv. Landslides, mudslides, or other similar hazards.

The terrain of the Plan Area slopes to the southwest at a rate of 25 feet per mile, and given this relatively flat topography, there would be *no impact* associated with landslides and slope instability.

b. Result in substantial soil erosion or the loss of topsoil.

The Plan would have a significant environmental impact if it would cause substantial soil erosion or loss of topsoil, consequently generating dust, resulting in the loss of arable soils, or hindering proper drainage and stormwater management. Erosion can result from either water or wind.

Buildout of the Plan would place additional structures on the RAAP site; however, construction activities in the Plan Area would be subject to the erosion control provisions in Chapter 155 of the Riverbank Municipal Code, which establish grading/clearing performance standards and permit thresholds. In addition, implementation of Mitigation Measure AQ-1a, which calls

for SJVAPCD Regulation VIII Control Measures, would reduce dust emissions from the construction activities. Compliance with these provisions and implementation of Mitigation Measure AQ-1a would limit and control wind erosion to the maximum extent practicable.

The construction of new buildings and structures on the RAAP site would also result in the creation of new areas of impervious surfaces such as rooftops and driveways, thereby increasing the amount and rate of urban storm runoff, which can increase erosion. However, the Plan includes Policy PUB-23 which requires developers to implement "green" infrastructure, where practical, such as on-site stormwater management, water reclamation, and permeable surfaces. Consequently, impacts associated with substantial soil erosion and loss of topsoil would be *less than significant.*

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As described above, land subsidence is not characteristic of soils in Riverbank and the Plan Area. The potential for seismic-related ground failure and landslides are discussed above, and risks associated with expansive soils are discussed below. Overall, buildout of the Plan would have a *less-than-significant* impact related to geologically unstable soils.

d. Be located on expansive soil, creating substantial risks to life or property.

The Plan would have a significant environmental impact if it would locate people or structures on expansive soils. Expansive soils undergo a significant volume change as a result of wetting or drying and this volume change can cause damage to improperly designed foundations and pavements. The San Joaquin soils found on the majority of the RAAP site have a high potential for expansion at 13 to 24 inches below surface, and the Madera soils found on the southern portion of the RAAP site have high expansion potential at 19 to 30 inches below surface. However, these risks can be ameliorated with proper analysis, design, and construction. Pursuant to Riverbank General Plan Policy SAFE-1.11, a geotechnical study would be required prior to construc-

tion on the expansive soils of the RAAP site, and the City would require that measures to reduce risks identified in the study be incorporated into project design prior to approval. In addition, as part of the routine implementation of the subdivision ordinance, Sections 152.140 to 152.143 of the Riverbank Municipal Code requires preliminary soil reports, soil investigation, and mitigation measures if the preliminary soil report found any critically expansive soils or other soil problems. Compliance with Policy SAFE-1.11 and continued implementation of the applicable provisions of the Riverbank Municipal Code and California Building Code would ensure that impacts related to expansive soils from buildout of the Plan would be *less than significant.*

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The Plan Area is served by the City of Riverbank Public Works Department Sewer Division and its wastewater facilities. Chapter 4.14-17 of this EIR contains a discussion of wastewater infrastructure and capacity. No septic tanks or alternative wastewater disposal systems would be required to serve new development. Therefore, there would be *no impact.*

2. Cumulative Impacts

This section analyzes potential impacts related to geology and soils that could occur from a combination of the Plan with other past, present, and reasonably foreseeable projects in the surrounding area. Cumulative impacts would occur if development associated with the Plan together with other projects would expose people or structures to substantial risk of injury, damage, or death related to seismic activity, soil erosion, or unstable soils. The geographic scope of this analysis is taken as the City of Riverbank sphere of influence, as defined in the General Plan.

As described above, the Plan Area is not located within a known, active earthquake fault zone, and as such, buildout of the Plan would not, either by itself or in combination with other projects in the City of Riverbank sphere of influence, place people or structures at risk in the event of fault rupture.

The same CBC standards for seismic safety and structural design applicable in the Plan Area would also apply throughout Riverbank, thereby reducing potential impacts from strong seismic ground shaking and seismic-related ground failure to a *less-than-significant* level.

Implementation of the Plan would not affect the characteristics of soils in the Plan Area of the City of Riverbank sphere of influence. Accordingly, Plan implementation would not contribute to a substantial increase in the risk of loss, damage, or death associated with expansive or unstable soils in the sphere of influence. Overall, cumulative impacts to geology, soils, and seismicity from buildout of the Plan in combination with other projects in the sphere of influence would be *less than significant.*

E. Impacts and Mitigation Measures

Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.

4.7 GREENHOUSE GAS EMISSIONS

This section assesses the greenhouse gas (GHG) emissions impacts associated with implementation of the Specific Plan. Included in this section is background information on GHGs and global climate change, a summary of the regulatory framework that pertains to the Specific Plan, and a summary of existing air quality conditions.

A. Background Information

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide and water vapor but there are also several others, most importantly: methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities.

- Carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion.
- Nitrous oxide is associated with agricultural operations such as fertilization of crops.
- Methane is commonly created by off-gassing from agricultural practices (e.g. keeping livestock) and landfill operation.
- Chlorofluorocarbons were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- Hydrofluorocarbons are now used as a substitute for chlorofluorocarbons in refrigeration and cooling.
- Perfluorocarbons and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with carbon dioxide being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of carbon dioxide equivalents (CO_2e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally-occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion (a particular concern in the low-lying Sacramento–San Joaquin Delta, where potable water delivery pumps could be threatened), and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

B. Regulatory Framework

This section summarizes key federal, State and City statutes, regulations and policies that would apply to the Plan. Global climate change resulting from GHG emissions is an emerging environmental concern being raised and discussed at the international, national, and statewide level. At each level, agencies are considering strategies to control emissions of gases that contribute to global climate change.

1. Federal Regulations

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto

Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the GHG intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012. At this time, there are no federal regulations or policies pertaining to GHG emissions.

2. State Regulations

The State of California is concerned about GHG emissions and their effect on global climate change. The State recognizes that "there appears to be a close relationship between the concentration of GHGs in the atmosphere and global temperatures" and that "the "evidence for climate change is overwhelming." The effects of climate change on California, in terms of how it would affect the ecosystem and economy, remain uncertain. The State has many areas of concern regarding climate change with respect to global warming. According to the 2006 Climate Action Team Report, the following climate change effects and conditions can be expected in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70 percent to 90 percent, effecting the state's water supply;
- Increasing temperatures from 8 to 10.4 degrees Fahrenheit (°F) under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution standards are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;

- Increased challenges for the state's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

a. Assembly Bill 1575 (1975)

In 1975, the Legislature created the California Energy Commission (CEC). The CEC regulates electricity production that is one of the major sources of GHGs.

b. Title 24, Part 6 of the California Code of Regulations (1978)

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2005 Standards went into effect October 1, 2005. Projects that apply for a building permit on or after this date have had to comply with the 2005 Standards. The 2008 Standards are currently being developed and were anticipated to become effective in late 2009.

c. Assembly Bill 1493 (2002)

Assembly Bill (AB) 1493 required California Air Resources Board (CARB) to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks.

d. State of California Executive Order S-3-05 (2005)

The Governor's Executive Order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels.

In June 2005, the Governor of California signed Executive Order S-3-05, which identified Cal/EPA as the lead coordinating State agency for establishing climate change emission reduction targets in California. A "Climate Ac-

tion Team," a multi-agency group of State agencies, was set up to implement Executive Order S-3-05. Under this order, the State plans to reduce GHG emissions to 80 percent below 1990 levels by 2050. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

e. Assembly Bill 32, California Global Warming Solutions Act (2006)

AB 32, the Global Warming Solutions Act of 2006, codifies the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. CARB regulations are required to begin phasing in by 2012. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, CPUC, and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It requires CARB and other State agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit.

CARB is also conducting rulemaking, culminating in rule adoption by January 1, 2011 for reducing GHG emissions to achieve the emissions cap by

2020. The rules must take effect no later than 2012. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the State's efforts to improve air quality.

In addition, landfill gas capture and control was identified as an early adoption measure for AB 32, and CARB has proposed a rule requiring gas capture and collection for landfills having at least 450,000 tons of waste in place and establishing performance standards for systems already installed.

f. Senate Bill 97, Modification to the Public Resources Code (2007)

Pursuant to Senate Bill 97 (SB 97), the Governor's Office of Planning and Research (OPR) is in the process of developing CEQA Guidelines addressing GHGs. OPR is required to "prepare, develop, and transmit" the guidelines to the Resources Agency on or before July 1, 2009. In June 2008, OPR issued interim guidance for addressing climate change through CEQA.

At the direction of the OPR, CARB is currently developing statewide interim thresholds of significance for GHG emissions. CARB is focusing on common project types that, collectively, are responsible for substantial GHG emissions – specifically industrial, residential, and commercial projects. The ongoing workshops have been planned to discuss further development of concepts introduced in its Preliminary Draft Staff Proposal on Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (CEQA).

g. Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

Recently, California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 would develop emissions-reduction goals in which regions can apply in planning activities. SB 375 provides incentives for local governments and

developers to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB would work with the metropolitan planning organizations (e.g. ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

h. Executive Order S-13-08 (2008)

This Executive Order directed California agencies to assess and reduce the vulnerability of future construction projects to impacts associated with sea-level rise.

i. California's Heavy Duty Vehicle Greenhouse Gas Emissions Reduction Measure

On December 12, 2008 (one day after adopting the AB 32 Climate Action Plan), CARB adopted the Heavy Duty Vehicle GHG Emission Reduction measure that requires long-haul truckers to install fuel-efficient tires and aerodynamic devices on their trailers. This measure will reduce GHG emissions through improved fuel economy.

3. Regional and Local Regulations

a. San Joaquin Valley Air Pollution Control District (SJVAPCD)

In August 2008, SJVAPCD's Governing Board adopted the Climate Change Action Plan (CCAP). The CCAP directed the District Air Pollution Control Officer to develop guidance to assist Lead Agencies and project proponents in

assessing and reducing the impacts of project-specific GHG emissions on global climate change. On December 17, 2009, SJVAPCD adopted its Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.[1] The guidance and policy rely on the use of performance based standards, or Best Performance Standards (BPS), to mitigate and assess the significance of project-specific GHG emissions on global climate change.

b. City of Riverbank

To date, the City has not developed a climate action plan. The Riverbank General Plan[2] contains the following goals and policies that relate, either directly or indirectly, to GHG emissions and the Specific Plan (see Table 4.7-1):

C. Existing Conditions

1. Greenhouse Gas Inventories

a. U.S. Inventory

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). The U.S. EPA is developing rulemaking to regulate GHGs under the Clean Air Plan (note that a 2007 Supreme Court ruling held that the U.S. EPA can regulate GHG emissions).[3]

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[1] SJVAPCD, 2009. *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.*

[2] City of Riverbank, 2009. City of Riverbank General Plan 2005-2025. Adopted April 22, 2009.

[3] On April 2, 2007, the United States Supreme Court issued a 5-4 decision in *Massachusetts v. EPA*, which holds that the U.S. Environmental Protection Agency has authority, under the Clean Air Act, to regulate greenhouse gas emissions from new vehicles. The U.S. EPA had previously argued it lacked legal authority under the Clean Air Act to regulate greenhouse gases. The majority opinion of the Supreme Court decision noted that greenhouse gases meet the Clean Air Act's definition of an "air pollutant," and the EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.

TABLE 4.7-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO GREENHOUSE GAS EMISSIONS**

Goal/Policy Number	Goal/Policy Content
Goal AIR-1	**Create and enhance development patterns that encourage people to walk, bicycle, or use public transit for a significant number of their daily trips.**
Policy AIR-1.2	Approved plans, subdivisions, and projects shall provide highly-connected circulation networks that accommodate safe, direct, and convenient alternatives to vehicular travel.
Policy AIR-1.7	New major activity centers, office, and commercial development shall accommodate alternatives to automobile access, including provision of secure bicycle storage and parking facilities.
Policy AIR-1.10	Projects or portions of projects that implement a fine-grained mixing[a] of housing types and land uses, and that include other pedestrian, bicycle, and transit oriented design elements, which generate fewer vehicle trips, will have a correspondingly lower contribution towards any roadway or intersection improvement mitigation measures required in City environmental documents and conditions or approval.
Goal AIR-2	**Construction practices and materials used in Riverbank minimize direct and indirect air pollutant emissions.**
Policy AIR-2.5	The City of Riverbank will require new residential, commercial, and industrial development to reduce air quality impacts from area sources and from energy consumption.

[a] The term "grain" can be used to describe the degree to which land uses are mixed and the size of development blocks. "Fine grain" development involves land uses located in proximity with one another on relatively smaller parcel or development blocks, allowing residents and employees to walk or bicycle among different destinations to meet their daily or occasional needs without use of a private automobile. By contrast, "coarse grain" development involves land uses that isolated from one another, with non-residential land uses typically occurring on larger parcels. This presents a situation in which residents and employees have a more difficult time traveling among destinations except by automobile. Public transit service is less feasible because transit routes would be located at a significant distance form potential transit users.

As part of the commitments to UNFCCC, the U.S. EPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all GHGs. This inventory is periodically updated with the latest update being

2009.[4] EPA reports that total U.S. emissions have risen by 7.3 percent from 1990 to 2009 to 6,633 million metric tons of equivalent CO_2 per year, while emissions decreased by 6.1 percent from 2008 to 2009. The decrease was primarily due to a decrease in economic output (resulting in lower energy consumption) and a decrease in the carbon density of fuels used to generate electricity. The inventory notes that the electric power industry is the highest emitter by economic sector at 33 percent. The transportation sector emits about 27 percent of CO_2 equivalent emissions, with 60 percent of those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 20 percent of CO_2 emissions.

As a part of U.S. EPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, EPA compared trends of other various U.S. data. Over the period between 1990 and 2009, GHG emissions grew at a rate of about 0.4 percent per year. Population growth was higher at 1.1 percent, while electricity consumption was at 1.5 percent and fossil fuel use grew at 0.5 percent. Gross domestic product grew at a much higher rate of 2.5 percent.

b. State of California Inventory

California emissions of GHGs or CO_2 equivalent emissions was estimated at 484 million metric tons of equivalent CO_2 emissions ($MMTCO_2e$), which is about 7 percent of the emissions from the entire United States. It is estimated that the United States contributes up to 35 percent of the world's CO_2 equivalent emissions. Transportation is the largest source of GHG emissions in California, contributing about 40 percent of the emissions. Electricity generation is second at over 20 percent, but California imports electricity during the summer bringing energy sources up to about 25 percent. Industrial activities account for about 20 percent of the State's emissions. Transportation is the largest source of GHG emissions in California, followed by industrial sources and electric power generation. On a per-person basis, GHG emissions are lower in California than most other states; however, California is a

[4] U.S. EPA, 2011. *2011 U.S. Greenhouse Gas Inventory Report Inventory of U.S. Greenhouse Gas E3missions and Sinks: 1990-2009.* USEPA #430-R-11-005.

populous state and the second largest emitter of GHGs in the United States and one of the largest emitters in the world.

Under a "business as usual" scenario, emissions of GHG in California are estimated to increase to approximately 600 $MMTCO_2e$ by 2020. CARB staff has estimated the 1990 statewide emissions level to be 427 $MMTCO_2e$, therefore, requiring a reduction of almost 30 percent in emissions by 2020 to meet the AB 32 goal.

CARB updated the future 2020 forecast in light of the economic downturn and updated the 2020 projected annual emissions to 545 million metric tons of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 million metric tons of CO_2e. Thus, an estimated reduction of 80 million metric tons of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

c. Riverbank Greenhouse Gas Emissions

To date, no formal emissions inventory has been conducted for the City of Riverbank.

D. Standards of Significance

1. CEQA Appendix G Standards

The Natural Resources Agency conducted formal rulemaking in 2009, as required by SB 97 for issuing criteria to determine the significance of projects or plans. The Plan would have a significant impact related to GHGs if it would:

a. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.

The Office of Planning and Research (OPR) recommends that each agency develop an approach to addressing GHG emissions that is based on best available information. The approach includes three basic steps: (1) identify and quantify emissions; (2) assess the significance of the emissions; and (3) if emissions are significant, identify mitigation measures or alternatives that will reduce the impact to a less-than-significant level.

2. Thresholds of Significance

The SJVAPCD has published recommended methodology for determining the significance of a project's contribution to global climate change. According to the Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA,[5] projects requiring preparation of an EIR would require quantification of project-specific GHG emissions. Projects implementing Best Performance Standards (BPS) or achieving at least a 29 percent GHG emission reduction compared to Business As Usual (BAU) would be determined to have a less than significant individual and cumulative impacts for GHG. There are no thresholds applicable to GHG emissions associated with of Specific Plans. However, potential GHG emissions associated with build-out of the Draft Specific Plan were modeled and presented in this analysis.

E. Impacts Discussion

The following provides a discussion of the potential GHG impacts that could occur as a result of implementation of the Plan and cumulatively.

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Operation-related GHG emissions derive primarily from five sources:

- Mobile source emissions due to additional trips generated by the Plan.

[5] SJVAPCD, 2009. *Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.* December 17.

- Emissions from electricity generated by fossil-fuel power plants to the Plan Area.
- Emissions caused by consumption of natural gas for heating, cooking, and water heating within the Plan.
- Municipal emissions created by transport and treatment of water supply to the Plan and by electricity used to light streets.
- Municipal emissions created by the disposal and decomposition in land-fills of solid waste generated from the Plan Area.

GHG emissions were modeled for existing or baseline conditions assumed to be 2010 and year 2020 to be consistent with AB 32 targets used by SJVAPCD to develop GHG significance thresholds. In addition, emissions were also modeled for 2030, which is the assumed build-out year of the Draft Specific Plan. The predicted 2020 emissions modeling assumes full build-out of the Draft Specific Plan, which is unlikely in that short timeframe. Therefore, this analysis likely overestimates the emissions. Area and mobile source emissions were computed using the California Emissions Estimator Model Version 2011.1.1 (CalEEMod), as recommended by SJVAPCD.

CalEEMod is a computer model developed by the South Coast Air Quality Management District (SCAQMD) to estimate air pollutant and GHG emissions from land use development projects. The model uses the latest statewide emission inventory models for mobiles sources (i.e. EMFAC2007). The model is periodically updated to reflect most recent emissions estimates for source types and incorporate accuracies in estimating emission from land use activities. The latest version of this model (i.e. Version 2011.1.1) was used in this analysis.

CalEEMod used the Draft Specific Plan land use types and sizes to predict area source and operational (traffic-related) emissions. The total square footages for the various land uses (e.g. office, industrial, retail, etc.) were input to the model. Trip generation rates produced by Fehr & Peers were input to CalEEMod. Where appropriate, the trip generation estimates include reduc-

tions for pass-by trips, which are trips made by traffic already using the adjacent roadway that enter the site as an intermediate stop on the way from another destination. They do not involve an extra vehicle trip. The methodology for developing the trip estimates is described in the Fehr & Peers report.[6] Trip generation represents the daily number of trips generated when the land uses are fully operational. Pass-by trips are subtracted only from the proposed retail land uses. The adjusted trip rates were entered into CalEEMod, such that CalEEMod computed the same total number of daily trips generated as the Fehr & Peers study. The default trip lengths in CalEEMod were assumed in the analysis.

Emissions rates associated with electricity consumption were adjusted to account for Pacific Gas & Electric utility's (PG&E) existing 2010 and future projected rate for 2020 and 2030 CO_2 intensity rate. These rates are based, in part, on the requirement of a renewable energy portfolio standard of 33 percent by the year 2020. CalEEMod uses a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced. The derived 2020 and 2030 rate for PG&E was estimated at 286.6 pounds of CO_2 per megawatt of electricity delivered and is based on the California Public Utilities Commission (CPUC) GHG Calculator.[7] 2020 is the last year for which CO_2 intensity rate data is available from the CPUC. The 2010 rate for PG&E was estimated at 529.1 pounds of CO_2 per megawatt of electricity delivered. Default model assumptions for GHG emissions associated with area sources, solid waste generation, and water/wastewater use were applied to the project. CalEEMod output worksheets are included in Appendix B.

The results shown in Table 4.7-2 reflect the primary features of the Specific Plan that produce emissions. As these results do not include the effects of the

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[6] Fehr & Peers, 2011. *Administrative Draft Transportation Impact Analysis Riverbank Army Ammunition Plant.*

[7] California Public Utilities Commissions GHG Calculator Version 3c, October 7, 2010. Available on-line at: http://ethree.com/public_projects/cpuc2.php. Accessed: March, 14, 2012.

TABLE 4.7-2 **ANNUAL OPERATIONAL GHG EMISSIONS (CO2E)**

Category	2010 (Baseline) (Metric Tons/Year)	2020 Specific Plan (Metric Tons/Year)	2030 Specific Plan (Metric Tons/Year)
Mobile (Vehicular Traffic)	1,479	12,742	12,190
Energy	2,146	3,485	3,485
Water and Wastewater	7,275	11,165	11,165
Solid Waste	3,774	8,012	8,012
Total	**14,674**	**35,404**	**34,852**

Source: Illingworth & Rodkin, 2012.

Draft Specific Plan policies that would reduce GHG emissions, emissions are overestimated.

The Specific Plan includes numerous goals and policies to reduce the rate of vehicle trips or VMT associated with implementation of the Plan land uses, and in turn GHG emissions (see Table 4.7-3).

A 2020 BAU model was also run using the average of the 2003 and 2004 rates for PG&E, estimated at 593 pounds of CO_2 per megawatt of electricity delivered[8]. The same proposed land uses and sizes, and vehicle trip rates were used as in the 2020 and 2030 model runs. Annual operational GHG emissions under BAU are estimated to be 45,990 metric tons of CO_2e per year. As shown in Table 4.7-2, the 2020 Specific Plan would emit approximately 35,404 metric tons of CO_2e per year. Therefore, the Specific Plan in 2020 would provide

[8] PG&E. 2011. Greenhouse Gas Emission Factors Info Sheet

TABLE 4.7-3 **RIVERBANK SPECIFIC PLAN POLICIES RELATED TO GREENHOUSE GAS EMISSIONS**

Goal/Policy Number	Goal/Policy Content
Goal LUD-1	**A land use mix that contributes to job creation for Riverbank residents.**
Policy LUD-1	Encourage a mix of new employment-intensive development types on undeveloped portions of the RAAP, including traditional industrial uses, R&D space, flex space, office uses, and supporting retail space.
Goal TRAN-1	**A new industrial park and retail area that facilitates the safe circulation of vehicles, bicycles, and pedestrians.**
Policy TRAN-1	Provide pedestrian crossings as appropriate to ensure that employees can safely walk between buildings and to areas off-site.
Policy TRAN-2	On new public streets built in the Specific Plan Area, use a landscaped planting strip to buffer sidewalks from roadways.
Policy TRAN-3	Ensure bicycles are accommodated through the provision of on-site bicycle parking.
Policy TRAN-4	Design roadways to accommodate all modes of travel safely.
Goal TRAN-3	**An industrial park that provides for safe queuing of delivery vehicles.**
Policy TRAN-8	Ensure that truck deliveries and movement do not inhibit pedestrian, bicycle, and vehicular circulation.

approximately a 23 percent GHG emission reduction compared to BAU. Additional reductions in GHG emissions would be required through the implementation of BPS for both land uses and possibly stationary source reductions. At this time, however, there is not enough information regarding specific planned uses and proposed stationary sources (e.g., industrial equipment) to implement SJVAPCD BPS or demonstrate at least a 29 percent GHG emission reduction compared to BAU. Therefore, this impact is considered *significant*.

2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

All future projects in the Plan Area would be subject to any new requirements under rule making developed at the State and local level regarding GHG emissions and would be subject to local policies that may affect emissions of GHGs. Future projects in the Plan Area would be analyzed for consistency with applicable plans, policies, and regulations on a project-by-project basis as they are proposed.

F. Impacts and Mitigation Measures

Impact GHG-1: Development and operation of the Specific Plan could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Mitigation Measure GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate BPS will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP.[9]

Significance After Mitigation. *Less than significant.*

[9] SJVAPCD, 2009. *Final Staff Report – Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act.* December 17.

4.8 MINERAL RESOURCES

This chapter summarizes information on mineral resources in and around the City of Riverbank, including the Plan Area. This chapter provides an overview of the current regulatory framework, a description of existing conditions, and an analysis of the potential impacts of the proposed Plan.

A. Regulatory Framework

This section summarizes the key State and local regulations, policies, and programs applicable to mineral resources in and around the Plan Area.

1. State Regulations

The 1975 California Surface Mining and Reclamation Act (SMARA) requires that local governments address mineral recovery on two levels: through direct regulation of mining operations, and through planning policies that harmonize the mineral resource needs of the State and region with environmental quality.[1] SMARA also contains policies for the conservation of known mineral deposits, access to which might be affected by proposed land uses, so that these deposits will be available for extraction and use.

The State Board of Mining and Geology conducts a two-step mineral resource inventory process mandated by SMARA and intended to ensure that important mineral deposits are identified and protected for continued and further extraction. The first step is classification of important mineral commodities by the State Geologist, based solely on geological factors. SMARA establishes the following four Mineral Resource Zone (MRZ) Classifications:

- **MRZ-1.** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

[1] City of Riverbank, 2005. Mineral Resources Background Report for the General Plan, page MR-1.

- **MRZ-2.** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- **MRZ-3.** Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4.** Areas where available information is inadequate for assignment into any other MRZ.

Additionally, SMARA establishes a Scientific Zone (SZ) classification for areas containing unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance.

The second step in the inventory process is designation, whereby deposits of prime importance to the future needs of the region are identified and their availability is assessed from an existing land use perspective. Following a public hearing and consultation with the affected cities and counties, the State Board designates all or part of areas classified as MRZ-2 or SZ as areas containing mineral resources of Statewide or regional significance. The State Board then transmits a report of its action to the affected city or county and within 12 months the jurisdiction must:

- Recognize and include in its General Plan the designated area of Statewide and regional significance transmitted by the State Board;
- Develop and adopt policies for the management of land use of areas classified MRZ-2 or SZ and designated by the State Board as areas of statewide and regional significance to protect those areas from premature development incompatible with mining;
- Emphasize the conservation and development of mineral deposits designated by the State Board to be of Statewide or regional significance.

2. Local Regulations

The Riverbank General Plan recognizes the Stanislaus River Corridor as an area associated with important mineral resources and includes the goals and

policies shown on Table 4.8-1 which seek to protect mineral resources and balance extraction with environmental, social, and economic considerations.

B. Existing Conditions

1. Mineral Resources

Mineral commodities in Stanislaus County are valued at several hundred million dollars, with gold and construction aggregate deposits representing the greatest value. Today, the most important area of the County for mining is the upstream portion of the Tuolumne River between Waterford and La Grange, which has substantial concrete-grade aggregate resources that could be used for future land development in the region. Several alluvial fans along the west side of the San Joaquin Valley are potential sources of concrete-grade aggregate, however, these deposits are of lesser quality than those found along the Tuolumne and Stanislaus Rivers.

The majority of the City of Riverbank, including the Plan Area, is in an area classified as MRZ-3a, indicating that there are known mineral occurrences of undetermined significance present. The area contains concrete aggregate (sand and gravel) and is a potential future source of construction aggregate, although much of the Riverbank area is developed or currently in agricultural use.

2. Mining Activities

The first full scale mining activities in Stanislaus County began during the Gold Rush in the mid-19th Century. Gold was initially the most sought-after commodity and the main extraction activity was concentrated in the eastern portion of the county; however, other metallic commodities including chromite, manganese, and mercury were also mined.[2] In the 20th Century, mining of industrial minerals including clay, diatomite, manganesite, mineral

[2] Higgins, Chris T., 1993. Mineral Land Classification of Stanislaus County, California. Special Report 173. California Department of Conservation, Division of Mines and Geology, Sacramento, California, pages 27-28.

TABLE 4.8-1 **RIVERBANK GENERAL PLAN GOAL AND POLICY RELATED TO MINERAL RESOURCES**

Goal/Policy Number	Goal/Policy Content
Goal CONS-9	**Protect mineral resources in the Riverbank Planning Area consistent with other environmental, social, and economic goals.**
Policy CONS-9.1	The City will coordinate with the California Geologic Survey to incorporate, as necessary, on policies for conservation and possible future extraction of mineral resources of regional or statewide significance.

Source: City of Riverbank General Plan 2005-2025.

pigment (yellow ochre), quartz (silica), and dimension stone began, with production in the more mountainous regions of the county.

Today, the only mineral commodity mined in Stanislaus County is construction aggregate in the form of sand and gravel. This material has been mined extensively in Stanislaus County since the 1860s, and while commonplace, is important for the construction of sidewalks, roads, and buildings required for development. In 1991, Stanislaus County produced 75 percent of the aggregate required for construction within the county; however, the California Division of Mines and Geology identified a potential shortfall in supply of construction aggregate from sources within Stanislaus County if the pace of development continued at the rate seen in the 1990s.[3]

There are no active mines inside the Riverbank city limits or in the Plan Area; however, there are five mines in the 12.49-square mile MRZ-2 zone along

[3] Higgins, Chris T., 1993. Mineral Land Classification of Stanislaus County, California. Special Report 173. California Department of Conservation, Division of Mines and Geology, Sacramento, California, page 152.

the Stanislaus River.[4] The Munn and Perkins Pit, where aggregate (sand and gravel) is mined, is the closest active mine to the Plan Area, located approximately 4 miles to the northeast of the Plan Area in Escalon, California. There are also major sources of construction aggregate located in areas adjacent to Stanislaus County, as well as from the Table Mountain Quarry east of Knights Ferry.

C. Standards of Significance

The draft RAAP Site Specific Plan would have a significant impact on mineral resources if it would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region or the state;

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a mineral resource plan, local general plan, specific plan or other land use plan.

D. Impacts Discussion

1. Project Level Impacts

a. Result in the loss of availability of a known mineral resource that would be of value to the region or the state.

Mineral resources are known to be present in the Plan Area. The Plan Area is classified as MRZ-3 and concrete aggregate (sand and gravel) are potentially present in this portion of the Plan Area, although it has not been determined whether significant quantities of this commodity are in fact present at this location. The site, however, is already largely developed and surrounded by land uses incompatible with mining activities, including residences and agri-

[4] Higgins, Chris T., 1993. Mineral Land Classification of Stanislaus County, California. Special Report 173. California Department of Conservation, Division of Mines and Geology, Sacramento, California, pages xiv.

cultural land. As such, future use of this site for mineral extraction is unlikely and therefore implementation of the Plan would not result in a significant loss of available minerals at this location. Overall, impacts related to loss of mineral resource availability from implementation of the Plan would be *less than significant.*

b. Result in the loss of availability of a locally-important mineral resource recovery site.

There are no mines located in the Plan Area. The closest active mine is the Munn and Perkins Pit, located approximately 3.8 miles to the northwest of the RAAP Site in Escalon, San Joaquin County. While the RAAP Site could potentially contain significant quantities of construction aggregate, it has not been determined that significant quantities of the commodity do in fact exist on the site. Additionally, the site is already largely developed and surrounding land uses would be incompatible with mining activities so that future use of the site for mineral extraction is unlikely. Therefore, overall, impacts related to loss of mineral resource recovery sites from implementation of the Plan would be *less than significant.*

2. Cumulative impacts

This section analyzes potential impacts to mineral resources that could occur from a combination of the proposed Plan with other reasonably foreseeable projects in the surrounding area. Cumulative impacts would occur if development associated with the Plan together with other projects in the City of Riverbank or adjacent portion of San Joaquin County along the Stanislaus River would result in the substantial loss of mineral resource sites or availability.

As described above, concrete-grade aggregate in the form of sand and gravel is potentially present in significant quantities in the Plan Area. This commodity is used to build sidewalks, roads, and buildings as the county grows; however, the California Division of Mines and Geology identified a potential shortfall in supply from sources within Stanislaus County if the pace of development continued at the rate seen in the 1990s. Implementation and

buildout of the Plan would result in the loss of a potential source of construction aggregate. This loss, however, would not be cumulatively considerable. Even without implementation of the Plan, mining activities at this location would be unlikely given that the site is already largely developed and that surrounding land uses are incompatible with mineral extraction activities. Further, substantial sources of construction aggregate located in areas adjacent to Stanislaus County as well as from the Table Mountain Quarry east of Knights Ferry. Therefore, implementation of the Plan would result in a *less-than-significant* impact related to loss of mineral resource sites or availability.

E. Impacts and Mitigation Measures

There are no significant impacts related to agricultural resources as a result of the proposed Plan. Therefore no mitigation measures are required.

4.9 HAZARDS AND HAZARDOUS MATERIALS

This section provides an overview of the regulatory framework, describes existing conditions, analyzes the potential impacts and includes recommended mitigation measures, if necessary, to address the impacts related to hazards and hazardous materials.

A. Regulatory Framework

Various federal, State, regional, and local agencies oversee hazards and hazardous materials issues in Riverbank, and have established regulations designed to protect human health and the environment from the effects of hazardous materials.

1. Federal

Following are the federal agencies that oversee hazards and hazardous materials concerns.

a. US Environmental Protection Agency

The US Environmental Protection Agency (US EPA) is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. The legislation includes the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (commonly referred to as "Superfund"), the Superfund Amendments and Reauthorization Acts of 1986, and the Resource Conservation and Recovery Act of 1986 (RCRA). The US EPA provides oversight and supervision for site investigations and remediation projects, and has developed land disposal restrictions and treatment standards for the disposal of certain hazardous wastes.

b. United States Department of Transportation

Transportation of chemicals and hazardous materials are governed by the United States Department of Transportation (DOT), which stipulates the types of containers and labeling and other restrictions to be used in the movement of such material on interstate highways.

2. State

Following are the State agencies and regulations pertaining to hazards and hazardous materials.

a. California Environmental Protection Agency

Within the State of California, California Environmental Protection Agency (Cal/EPA) serves as the umbrella agency for six boards/departments: the California Air Resources Board (CARB) AND San Joaquin Valley Air District (SJVAD), the Department of Pesticide Regulation (DPR), the Department of Toxic Substance Control (DTSC), the California Integrated Waste Management Board, the Office of Environmental Health Hazard Assessment (OEHHA) and the State Water Resources Control Board (SWRCB) and its associated regional Water Boards.

- **California Air Resources Board and San Joaquin Valley Air Pollution Control District (Valley Air District).** CARB and the Valley Air District have responsibility for developing and enforcing regulations to achieve and maintain ambient air quality standards in the district. CARB is responsible for enforcing the Clean Air Act and California's State Ambient Air Quality Standards. The Valley Air District is responsible for regulating air emissions from stationary sources.
- **Department of Pesticide Regulation.** The DPR has the primary responsibility for regulating all aspects of pesticide sales and use to protect public health and the environment. The DPR's mission is to evaluate and mitigate impacts of pesticide use, maintain the safety of the pesticide workplace, ensure product effectiveness and encourage the development and use of reduced-risk pest control practices while recognizing the need for pest management in a healthy economy.
- **Department of Toxic Substance Control.** The DTSC works in conjunction with the US EPA to enforce and implement specific laws and regulations pertaining to hazardous wastes. California legislation, for which the DTSC has primary enforcement authority, includes the Hazardous Waste Control Act and the Hazardous Substance Account Act. Most State hazardous waste regulations are contained in the CCR, Title

27. The DTSC generally acts as the lead agency for soil and groundwater cleanup projects, and establishes cleanup and action levels for subsurface contamination that are equal to, or more restrictive than, federal levels.

- **Office of Environmental Health Hazard Assessment.** The mission of the OEHHA is to protect and enhance public health and the environment by objective scientific evaluation of risks posed by hazardous substances.
- **State Water Resource Control Board.** The SWRCB, through its regional boards, regulates discharge of potentially hazardous materials to waterways and aquifers and administers basin plans for groundwater resources in various regions of the State. The California Regional Quality Water Quality Control Board Central Valley Region is the regional board that has jurisdiction over the Plan Area. The SWRCB provides oversight for sites at which the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

b. California Department of Transportation

California Department of Transportation (Caltrans) manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports and works with local agencies. This agency is also the first-responder for hazardous material spills and releases that occur on those highway and freeway lanes and inter-city rail services.

3. Local and County Agencies

Following are the local and County agencies that oversee hazards and hazardous materials in Stanislaus County.

a. Stanislaus County Environmental Resources Department

The Environmental Resources Department of Stanislaus County oversees hazardous materials programs throughout the county. It maintains hazardous materials response teams and implements the county's plan for emergencies resulting from chemical spills. Additionally, the Department prepares and

implements the County's Hazardous Waste Management Plan, as well as inspects the facilities impacted by the Aboveground Storage and Underground Storage Tank Programs. Finally, the Department maintains hazardous materials response teams to assist public and fire agencies during chemical spills.

b. Stanislaus County Office of Emergency Services (OES)

The Stanislaus County OES is a division of the General Services Department and its mission is to minimize or reduce injury, loss of life, environmental and property damage from emergencies within Stanislaus County. The OES provides the following services:

- Prepare disaster response plans and procedures, and improve response capabilities
- Coordinate public safety agency response to large scale emergencies in Stanislaus County
- Respond to hazardous materials incidents in the unincorporated areas of
- Provide instructions and information to the public during disasters
- Assist businesses to comply with Chapter 6.95 of the Health and Safety Code, hazardous materials management plans and inventories
- Assist businesses to comply with the Federal Risk Management Plan Program
- Make hazardous materials "Community-Right-To-Know" Information available to the public
- Provide disaster preparedness presentations to community groups

c. Stanislaus County Consolidated Fire Prevention District

In cooperation with Stanislaus County the Stanislaus County Consolidated Fire Prevention District (SCFPD) has implemented a Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which identifies ways to minimize damage from those disasters. The plan is a comprehensive resource document that serves many purposes, including: enhancing public awareness and understanding, creating a decision tool for management, promoting compliance

with State and federal program requirements, enhancing local policies for hazard mitigation capability, and providing inter-jurisdictional coordination. Additionally, the MJHMP has identified and profiled the following hazards: Earthquake, Landslide, Dam Failure, Flood, and Wildfire. The MJHMP must be updated every five year, in accordance with FEMA guidelines.

d. City of Riverbank General Plan

The Riverbank General Plan includes several goals and policies that address hazards and hazardous materials. Table 4.9-1 lists these goals and policies.

B. Existing Conditions

The RAAP site is currently listed as a federal Superfund site due to groundwater contamination and other pollutants at the site. Some remediation has already occurred and further remediation is planned for the future. Additionally, there are areas and buildings on the RAAP site that still require investigation and study to determine the extent of contamination.

As shown on Figure 4.9-1, and described below, there are several different levels of contamination on the site. The most significant contamination issue is a plume of subsurface groundwater that contains chromium and cyanide, which resulted from past spills at the Industrial Wastewater Treatment Plant (IWTP). While the defects that caused the spills have been corrected, further treatment is required to remediate the contamination to State and federal standards. There are also other areas with less significant contamination issues, some of which limit where future development can occur. Areas within the RAAP site were divided into the following seven categories:

- **Category 1.** Areas where no release or disposal of hazardous substances or petroleum products has occurred, including no migration of substances from adjacent areas. (Areas of the RAAP site shown with no color overlay on Figure 4.9-1 are within this category.)
- **Category 2.** Areas where only the release of petroleum has occurred.



Source: Final CERFA Report, Riverbank Army Ammunition Plant, 2006.

FIGURE 4.9-1

ENVIRONMENTAL REMEDIATION REQUIREMENTS

TABLE 4.9-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO HAZARDOUS MATERIALS**

Goal/Policy Number	Goal/Policy Content
Goal SAFE-1	**Minimize the loss of life and damage to property natural and human-caused hazards.**
Policy SAFE-1.1	The City will ensure that approved development projects and public investments are consistent with the information provided in the Stanislaus County Multi-Jurisdictional Hazard Mitigation Plan.
Policy SAFE-1.2	The City will continue to enforce State of California Building Standards Commission uniform codes, such as the Uniform Building Code and California Fire Code with adopted Fire District amendments.
Policy SAFE-1.4	The City will require setbacks, ignition resistant building materials, or other measures to reduce exposure to potential wildfires in areas designated for natural open space preservation, in coordination with California Department of Forestry and Fire Protection recommendations and Maintenance of Defensible Space Measures, as appropriate.
Policy SAFE-1.5	Approved plans, projects, and subdivision requests will ensure adequate fire flow per City and Fire District standards. The installation of automatic fire sprinklers may, at the discretion of the City and the Fire Chief, allow for a reduction in the required fire flow, while still complying with the California Fire Code requirements.
Policy SAFE-1.8	The City will require that hazardous materials are used, stored, transported, and disposed in a safe manner and in compliance with local, State, and federal safety standards.
Policy SAFE-1.9	Developments located on farmland or former farmland shall prepare reports that analyze residual agricultural chemicals that may be present on-site. Developments on such sites shall include measures to remove any risk due to hazardous materials for on-site proposed land uses, as well as existing and proposed land uses and users in the vicinity.
Policy SAFE-1.10	The City will review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users.
Goal SAFE-2	**Provide adequate access for emergency response.**

TABLE 4.9-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO HAZARDOUS MATERIALS** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy SAFE-2.2	The City will consult with fire protection service providers in reviewing development proposals. Development proposals will include City conditions that respond to concerns of fire protection service providers.
Policy SAFE-2.3	New developments will provide fire flow as required in the Public Facilities and Services Element of the General Plan and relevant City Master Plans.
Policy SAFE-2.4	The City will improve fire flow in existing developed areas of the City, as feasible, to meet standards presented in the Public Facilities and Services Element of the General Plan and relevant City Master Plans.
Goal CONS-6	**Maintain or increase surface and groundwater quality and supply.**
Policy CONS-6.2	The City will coordinate with appropriate regional, State, and federal agencies to address local sources of groundwater and soil contamination, including underground storage tanks, septic tanks, agriculture, and industrial uses.
Goal CIRC-4	*Move freight and passengers efficiently.*
Policy CIRC-4.1	The City will work with relevant public agencies and the railroad to appropriately regulate the movement of truck traffic and hazardous materials throughout the City.

- **Category 3.** Areas where contamination has occurred at a level that requires no further remediation.
- **Category 4.** Areas where sufficient remediation has already taken place and no further action is necessary.
- **Category 5.** Areas where contamination has occurred and remediation is underway, but further action or ongoing monitoring is required.
- **Category 6.** Areas where contamination has occurred, but for which no remediation effort has been implemented (no Category 6 sites were identified at RAAP).

♦ **Category 7.** Areas requiring further assessment.

In July 2009, a site visit was conducted by Weston Solutions to review the visual environmental site conditions of the RAAP site. Although not all areas were accessible due to locked areas, and areas requiring tenant permission for access, the site visit included Buildings 1, 2, 5, 6, 7, and 8 of the former production line areas, Building 11, (the former spheroidizing facility), as well as the industrial water treatment facilities, and landfill.

1. Former Production Line Buildings

a. Building 1

Building 1 appears to be used for equipment storage. Most of what was apparently the original production line equipment has been left in place within the building. Visible staining on equipment, floors, and pits and adjacent to floor drains was observed. There was evidence of concrete floor repair, which appeared to be a location where equipment was removed and the floor repaired or re-installed.

b. Building 2

Building 2 is similar in condition to other buildings with deteriorating wall and roof panels. Paint booths are located adjacent to the rebar tenant who is using the paint booths. It is not known if paint booth is operating under previously-issued permits, or if the tenant is has obtained new permits. Most of Building 2 appears to be used as defunct equipment storage with some of the space cleared for use by tenants at the east end of the facility. Hydraulic lifts are in use by tenants.

c. Building 4

Building 4 contained an active tenant production line for plastic leaning and shredding.

d. Building 5

Building 5 included remnants of wall or pipe insulation, and equipment remained in the building from previous production activity. During the time of the site visit, Building 5 was used for material and equipment storage.

Most of what could be seen throughout was in good to fair condition.

Production area sumps now collect any spills or leaks and flow through an overhead piping system to the IWTP. The old sump consisting of an underground piping system has been closed.

e. Building 6

Building 6 contained sulfuric acid tanks, which were located in a bermed and trenched area that provides spill containment. During time of the site visit, Building 6 contained intact production equipment.

f. Building 7

Building 7 is adjacent to the loading dock and is a brick paved area. It is believed that this building was used as an interim storage area for materials that were still hot from ovens or the production line. At the time of the site visit, the former press area was used as a lunch and break area by employees.

Visible building infrastructure for production line support included overhead lines for compressed air, chilled water, production water, natural gas, and fire suppression. Several potentially asbestos containing transite panels and areas of missing panels were visible. Fire proofing material on building walls that potentially contains asbestos was also observed. Both very old and very new overhead lifts were located throughout the building. Potential PCBs in the hydraulic storage tanks for the lifts is a concern. Few pieces of equipment showed labeling indicating the status of PCB contents.

- Electrical feeds run from the transformer to the exterior of Building 7 on the south side. Wire coating showed signs of decay and potentially contains asbestos, lead, and PCBs. Visible evidence of wall and roofing material on the ground in the open areas between buildings, as well as chunks

of the electrical wiring coating were noted. Some staining was visible on the concrete near what appeared to be an outside metal lathe area.

- Heavy staining on concrete/asphalt adjacent to northeast side of Building 7 was noted. Dilapidated equipment and unused drums/containers were also deteriorating in this area.

g. Building 8

Building 8 is a newer building that was added to the east end of the production lines building and contained large metal presses, intact production equipment, and empty press pits, in the process of being removed. The empty press pits showed evidence of oil use/staining. Some equipment was labeled to show that polychlorinated biphenyl (PCB) testing had occurred. Sumps and pits surrounding the production equipment were lined with brick and concrete for thermal protection.

The north end of Building 8 included large presses and equipment storage. Several large overhead lights stored on the floor under plastic in this area. It is unknown if any of the lights were mercury vapor lights or have PCB ballasts. The depth of large press pits appeared to be 10 to 12 feet below ground surface. Obvious staining on equipment was observed.

h. Building 11

Building 11 has two subfloors below the rail operation area. Long bunker style rooms with rack storage were present. No evidence of what was previously stored in the area was observed, although the facility was likely used for drum storage. At the time of the site visit, Building 11 was used by a tenant for rail cars transporting waste oil. There was visible staining on the rail line within and adjacent to the building. The building interior and exterior were in similar level of deterioration as Buildings 1, 2, and 7.

i. Building 51

Building 51 was labeled as a chemical quality control laboratory. Access was limited during the site visit, but it appeared to contain standard laboratory equipment associated with chemical quality control. The floors in the labora-

tories were 9-inch by 9-inch vinyl floor tile, which is could potentially contain asbestos.

j. Building 180

At the time of the site visit, Building 180 was identified as the hazardous waste storage area, but materials inside were not labeled and the emergency eye wash station was disconnected or not in operation.

2. Industrial Wastewater Treatment Plant

Visual evidence at the IWTP indicated that one clarifier was not in operation, and the other was being used minimally. The majority of process tanks appear to be defunct and not maintained. Chemical placarding did not appear to match actual material being stored, and acids and bases appeared to be stored in the same containment area. A waste bin storage area was located adjacent to the IWTP and several containers were in use. Some staining was observed in the area south of the IWTP.

3. Landfill

The landfill area appears to be well maintained. No erosion from the top or sides was visible and no obvious signs of subsidence were apparent. The vegetation appeared consistent across the area and animal traps for burrowing animals were located at regular intervals around the base of the landfill. As noted above, the landfill area has been characterized as being underlain with groundwater contamination, but the area does not require removal or other remedial response.

C. Standards of Significance

The Plan would have a significant impact related to hazards and hazardous materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

D. Impacts Discussion

1. Project Impacts

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Implementation of the Specific Plan would allow for future development that could, depending on the specific proposed uses, increase the amount of hazardous materials used and wastes generated in the Specific Plan Area, as well as the number of people and structures exposed to these hazards.

Goal SAFE-1 of the City of Riverbank General Plan calls for the minimization of the risk of loss of life and damage to property from natural and human-cause hazards. Current hazardous substance regulations generally require safe handling and disposal of hazardous substances, which would reduce the risk for a chemical release to occur as a result of handling and/or disposal practices. In addition, Policy SAFE-1.8 of the General Plan requires that hazardous material are used, stored, transported, and disposed of in a safe manner that complies with local, State, and federal safety standards. Policy SAFE-1.10 requires the City to review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users. With the implementation of these General Plan policies, the impact of the Specific Plan from the transport, use, or disposal of hazardous materials would be *less than significant.*

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Increased development within the Specific Plan Area could increase the amount of accidents involving the release of hazardous materials into the environment. The transportation of hazardous materials on area roadways and railroad spurs is regulated by the California Highway Patrol, Department of Transportation, and the California Public Utilities Commission, respectively. The use and storage of these materials is regulated by the DTSC (22 CCR Sections 66001, et seq.). The use, storage, and transport of hazardous materials by developers, contractors, business owners, and others are required to be in compliance with federal, state, and local regulations during project construction and operation. Facilities that use hazardous materials are required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. All existing and future projects on the RAAP site would be required to comply with federal, State, and local regulations regarding the handling, disposal, and clean-up of hazardous materials. Furthermore, City of Riverbank General Plan Policies CONS-6.2,

SAFE-1.8, SAFE-1.9, and SAFE-1.10 (listed above in section A.3.d., City of Riverbank General Plan), would serve to reduce the potential impact resulting from the accidental release of hazardous materials from new development into the environment. As a result, a *less-than-significant* impact would occur.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

There are no existing or proposed schools within one-quarter mile of the RAAP site and the railroad spur, which might be used for the transportation of hazardous materials. As a result, *no impact* would occur.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

As discussed above in Section B., Existing Conditions, the RAAP site contains known hazardous materials sites. However, they are either monitored and/or under active remediation by government agencies, or remediation activities have been completed.

The two remaining active sites within the project site are the landfill and groundwater contamination. The landfill will be under long-term management until 2015 at which time the completed landfill cap will be maintained. Annual surveys to assure stability and annual management of a pesticide program to prevent damage to the completed landfill cap are planned.[1]

Remediation plans for the groundwater contamination area has included a long term maintenance schedule of 5-year reviews, continuing until 2023, however, active evaluation of in-situ treatment is underway and additional in-situ treatment and extraction configuration modifications are anticipated to accelerate the cleanup process. A strategy for groundwater treatment sys-

[1] U.S. Army Corps of Engineers, 2009. Environmental Assessment for BRAC Disposal and Reuse of the Riverbank Army Ammunition Plant, page 4-117.

tems, long term management, and delisting from the Superfund site list will be developed as the site moves toward cleanup.[2]

As identified in Figure 4.9-1 and discussed above in Section B.1, the RAAP site contains several buildings that will require evaluation should they be incorporated into future development proposals. Policy SAFE-1.10 of the City of Riverbank General Plan, requires that the City review development requests and require that any airborne, waterborne, windborne, and other hazardous materials issues are fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users. Any future proposed action within the RAAP site that occurs within the areas identified as Category 7 areas of in Figure 4.9-1 will require evaluation in order to ensure that impacts are reduced. Through implementation of General Plan Policy SAFE-1.10, a *less-than-significant* impact would occur.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

The RAAP site is located approximately 1.2 miles from the Peterson Airport, a privately owned airport located at 5800 Langworth Road. The landing strip runs from east to west, and the landing approach is from the southwest. The Stanislaus County Comprehensive Airport Land Use Plan (CLUP) (amended in 2004) describes safety compatibility standards for privately owned airports in Stanislaus County. Airport operation hazards include: incompatible land uses, power transmission lines, wildlife hazards (e.g. bird strikes), and tall structures that penetrate the imaginary surfaces surrounding an airport. The term "imaginary surfaces," established by Federal Aviation Administration (FAA) regulations (14 CFR 77), refers to heights above which any object or structure is considered by the FAA to constitute a hazard to aircraft navigation, and thus a hazard to both aircraft and people and structures on the

[2] U.S. Army Corps of Engineers, 2009. Environmental Assessment for BRAC Disposal and Reuse of the Riverbank Army Ammunition Plant, page 4-123.

ground. The RAAP site is not located within an established land use plan for the airport, nor is it located within close proximity to the runway that could result in conflicts between aircraft and people and structures on the ground. Therefore, safety hazards associated with the Peterson Airport would be *less than significant.*

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

As discussed above, the RAAP site is located approximately 1.2 miles from the Peterson Airport, a privately owned airport located at 5800 Langworth Road. The RAAP site is not located within an established land use plan for the airport, nor is it located within close proximity to the runway. As result, the conflicts between aircraft and people and structures on the ground would not result in safety hazards. This would be considered a *less-than-significant* impact.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

As described in Chapter 4.16, Transportation and Traffic, development under the Specific Plan would make only minor changes to the existing road network although it would bring more employees to the area and more congestion on existing streets. The Stanislaus County MJHMP includes Office of Emergency Services inundation maps for the New Melones and other dams that would affect the county, in the event of earthquake or other causes of failure. If failure of the New Melones Dam were to occur, the City of Riverbank evacuation routes would be to the southeast toward higher ground, with the primary evacuation routes along Terminal/Santa Fe and Claus Road towards Empire and Waterford. Although the RAAP Specific Plan proposes to modify the visual character of Claus Road, vehicle travel would not be hindered or obstructed, and would not impair implementation of or physically interfere with the Stanislaus County MJHMP. As a result, a *less-than-significant* impact would occur.

h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

As discussed in the City of Riverbank General Plan, no areas or zones in the Planning Area are defined as Very High Fire Hazard Severity, and the Planning Area is not in a State responsibility area, which is defined as part of the state where CALFIRE is the primary service responsible for providing basic wildland fire protection assistance (CDF 1998). The SCFPD would respond to fires in the Planning Area. New development would be required by law to incorporate California Building Code, California Fire Code with adopted Fire District amendments, and other applicable state and local fire safety requirements. In addition, General Plan policies SAFE-1.1, SAFE-1.2, SAFE-1.4, SAFE-1.5, and SAFE-2.2, SAFE-2.3, SAFE-2.4, listed above in Section A.3.d., would ensure people and structures would not be exposed to significant risk of loss of injury involving wildland fires. As a result, a *less-than-significant* impact would occur.

2. Cumulative Impacts

This cumulative analysis considers the Specific Plan in the context of the General Plan. Although through the implementation of the RAAP Specific Plan, there will likely be an increase in the use of hazardous materials, all new use, storage, transport, and activities associated with remediation of contaminated sites are subject to local, State, and federal regulation, and risks are evaluated on a parcel-specific basis. There would therefore be a *less-than-significant cumulative impact* due to hazardous materials and contaminated sites.

E. Impacts and Mitigation Measures

Since there are no significant impacts related to hazardous materials as a result of the Plan, no mitigation measures are required.

4.10 HYDROLOGY AND WATER QUALITY

This section summarizes information on hydrology, including flooding, and water quality in the RAAP Site Specific Plan Area (Plan Area), and provides an evaluation of the effects the draft Specific Plan would have on these features of the natural environment.

A. Regulatory Framework

There are several laws and policy documents that affect the requirements and infrastructure needs for water quality and stormwater discharge in the Specific Plan Area, as well as flood protection. The most important of these are described below.

1. Federal Water Pollution Control Act

The Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA) of 1972, regulates the discharge of pollutants into watersheds throughout the nation. Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires the State to develop a total maximum daily load (TMDL) for each of the pollutants impacting the listed water bodies. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given water body on the Section 303(d) list would be remediated.

Section 402(p) of the CWA establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program.[1] Section 402(p) requires that storm-

[1] Authorized by the CWA, the permit program controls water pollution by regulating point sources (discrete conveyances such as pipes or man-made ditches) that

water associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by a NPDES permit. On December 8, 1999, the US Environmental Protection Agency (EPA) circulated Phase II regulations for non-point sources requiring permits for stormwater. Permits will be required for discharges from Small Municipal Separate Storm Sewer System (MS4s) operators.[2] In California, the NPDES program is administered by the State (see below).

2. Federal Emergency Management Agency

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs) designating these areas. These tools assist cities in mitigating flooding hazards through land use planning and building permit requirements. To address the need for insurance to cover flooding issues, FEMA administers the National Flood Insurance Administration (NFIA) program. The NFIA program provides federal flood insurance and federally financed loans for property owners in flood prone areas. To qualify for federal flood insurance, the City must identify flood hazard areas and implement a system of protective controls. The City of Riverbank does participate in the NFIA program.

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discharge pollutants into waters of the United States. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In most cases, the NPDES permit program is administered by authorized states with oversight from the EPA. Summarized from the EPA website, http://cfpub.epa.gov/npdes/, accessed on July 21, 2009.

[2] Small MS4s are publicly owned conveyances or conveyance systems of ditches, curbs, or underground pipes that divert stormwater into the surface waters of the State. Summarized from the EPA website, http://cfpub.epa.gov/npdes/stormwater/munic.cfm, accessed on July 21, 2009.

3. State Water Resources Control Board

The State Water Resources Control Board (SWRCB) is responsible for implementing the CWA and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges – individual permits and general permits. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0004-DWQ) for MS4s covered under the CWA to efficiently regulate numerous stormwater discharges under a single permit. Permittees must meet the requirements in Provision D of the General Permit, which require development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

4. Regional Water Quality Control Board

The State's Porter-Cologne Water Quality Control Act outlines the specific responsibilities of the Regional Water Quality Control Boards (RWQCB), and the procedures for coordinating with the SWQCB to meet federal CWA standards. Stanislaus County falls within the Central Valley Region, which is the largest in the State, stretching from the Oregon border south to Los Angeles County. It encompasses 60,000 square miles, or about 40 percent of the State's total area, and includes 38 of the state's 58 counties. The Central Valley Regional Water Quality Control Board (CVRWQCB) headquarters are in Sacramento with branch offices in Redding and Fresno.

The CVRWQCB's mission is to "preserve and enhance the quality of California's water resources for the benefit of present and future generations." This duty is carried out by formulating and adopting water quality control plans for specific ground and surface water basins and by prescribing and enforcing requirements on waste discharges. As mentioned above, jurisdictions submit various water quality and stormwater plans to the regional and State boards for approvals.[3]

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[3] http://www.waterboards.ca.gov/centralvalley/board_information/index.html, accessed on August 10, 2006.

5. City of Riverbank General Plan

The City of Riverbank General Plan (2005 – 2025) states that approved projects, plans, and subdivisions shall provide for collection, conveyance, treatment, detention, and other stormwater management measures in a way that does not decrease water quality or alter hydrology in the Stanislaus River or associated groundwater recharge areas.

B. Existing Conditions

In general, the area around the Plant Production Area is mostly paved. The area consists of seven production lines, process water/groundwater treatment facilities and various buildings used for maintenance, administration, and storage. Approximately 155 buildings are located in the Plan Area. Some of the large buildings, such as the Main Production Area, have been subdivided into smaller internal buildings. The approximate total square footage of roofed areas at RAAP is 924,514 square feet.

The plant site is bounded on the east by pasture land and on the west by Claus Road and some residences. Rural residential areas are located to the north and south of the Plan Area.

1. Hydrogeology

The RAAP is not located in a 100-year floodplain. Five aquifer zones—A, A′, B, C, and D—were identified based on depth and stratigraphy during a previously conducted Remedial Investigation (RI) at the site.[4] Subsequent pump testing indicated strong interaction between the A′, B, and C zones. These aquifer zones are summarized as follows:

- A – Unsaturated upper sand zone; average depth from 29 to 60 feet below ground surface (bgs).

[4] Weston, Roy F. Inc. (Weston), 1991, *Riverbank Army Ammunition Plant Remedial Investigation Report.* Prepared for Commander, U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland 21010-5401.

- A′ – Partially to fully saturated, well-graded silty sand; average depth from 60 to 90 feet bgs; approximately 30 feet thick.
- B – Saturated, semi-continuous sand units interbedded with thin silt and clay layers; average depth from 90 to 120 feet bgs; approximately 30 feet thick.
- C – Saturated sand zone; average depth from 120 to 150 feet bgs; approximately 30 feet thick.
- D – Saturated coarse sand and gravel with volcanic material; between 150 and 220 feet bgs; approximately 70 feet thick.

The aquifer zones defined above are connected hydraulically. The presence of discontinuous fine-grained sediment layers creates the potential for a complex flow pattern in the subsurface.

Aquifer testing indicates hydraulic connection between the A′, B, and C aquifer zones.[5] The general groundwater direction is to the west of the plant.

The topography of the RAAP and the surrounding area can be described as flat valley land, and the gradient of the land surface slopes southwestward at a rate of 25 feet per mile. The average elevation of the plant is 135 feet above mean sea level.[6]

2. Surface Water Hydrology

The City of Riverbank is located within the Middle San Joaquin-Lower Merced-Lower Stanislaus watershed, a sub-watershed of the San Joaquin River watershed, which includes the San Joaquin Valley north of Fresno, along with the adjacent mountainous areas to the east and west. The average rain-

[5] U.S. Army, 2006a, U.S. Army BRAC 2005 Environmental Condition of Property Phase I Report, Riverbank Army Ammunition Plant. Prepared by CH2M Hill, November 17.

[6] U.S. Army, 2006a, U.S. Army BRAC 2005 Environmental Condition of Property Phase I Report, Riverbank Army Ammunition Plant. Prepared by CH2M Hill, November 17.

fall in the Middle San Joaquin-Lower Merced-Lower Stanislaus watershed is approximately 12.1 inches.[7]

Runoff from the generally flat area is relatively slow. Much of the incident precipitation is absorbed by the soil, and very little runoff occurs from the agricultural lands except during unusually heavy rains. Runoff from paved areas is collected in numerous inlets located around the RAAP site that connect to a main storm drain line. The main storm drain line carries flows towards the north, opposite the surface grade, and the lift station conveys flow into the north reservoir. This reservoir is designed as a detention basin that allows for temporary stormwater runoff to facilitate settling of suspended sediment. Two outlets, with approximately 1 foot of elevation difference, are provided in the reservoir to discharge water into the Oakdale Irrigation District (OID) 30-inch diameter line that runs parallel to the north side of the reservoir. Between rain events, some water remains in the reservoir, below the outlets, and either evaporates, infiltrates into the ground, or is used by the vegetation that grows in the basin. The lift station located near the reservoir has a third smaller pump that conveys stormwater from the lift station directly to the OID pipe during periods of excessive rain.

A small portion of the site drains to the south stormwater reservoir, located near the southeast corner of the site. A lift station adjacent to the south stormwater reservoir pumps runoff from the reservoir to the south end, or high side, of the above-mentioned main storm drain.

3. Flooding

Areas of the city subject to historic flooding include areas along the Lower Stanislaus River, which traverses along the northern boundary of the City of Riverbank. However, as noted above, the Plan Area is not located in a FEMA-designated flood zone.

[7] City of Riverbank, *General Plan Recirculated DEIR,* page 4.10-1.

There are no significant large bodies of water in the immediate vicinity of the Plan Area. New Melones Lake, a reservoir formed by New Melones Dam, is located approximately 27 miles northeast of the Plan Area. Tulloch Reservoir is located downstream from New Melones and Tulloch, approximately 22 miles northeast of the Plan Area. Woodward Reservoir, located in the northeastern portion of Stanislaus County, is approximately eight miles from Riverbank. Modesto Reservoir and Turlock Lake are located southwest of Riverbank, approximately 18 miles away.[8]

The Plan Area is located within the dam failure inundation zones of the New Melones Dam.[9] In the event of dam failure, the City and its surrounding area, including the Plan Area, could be inundated.[10] The elevation of the Plan Area and distance from bays preclude potential inundation by coastal hazards such as tsunamis, extreme high tides, or future sea level rise.

C. Standards of Significance

The Plan would have a significant impact on hydrology and water quality if it would:

a. Violate any water quality standards or waste discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which

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[8] City of Riverbank, *General Plan Recirculated DEIR,* page 4.10-1.

[9] Map displays Stanislaus County with Dam Inundation Areas of regional dams, http://www.stanoes.com/pdf/mjhmp/2010-inundation-full-county-tabloid.pdf, accessed on June 6, 2012.

[10] City of Riverbank, 2010, Local Hazard Mitigation Plan, Hazard Identification, http://hazardmitigation.calema.ca.gov/docs/approved_lhmps_under_2008_fema_guidance/Riverbank_City%20of_Hazard%20Mitigation%20Plan%20-20June%202010.pdf, accessed on June 6, 2012.

would not support existing land uses or planned uses for which permits have been granted).

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

f. Otherwise substantially degrade water quality.

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

j. Inundation by seiche, tsunami, or mudflow.

D. Impacts Discussion

1. Project Impacts

a. Violate any water quality standards or waste discharge requirements.

The Specific Plan proposes to implement the use of low-impact development (LID) to be employed on a project-by-project basis. The draft Specific Plan recommends several LID techniques including rain catchments, cisterns, rain

gardens, and permeable paving that would reduce erosion on- and off-site. Additionally, for all future projects in the Plan Area before the approval of grading permits, the project applicant would be required to consult with the City, the SWRCB, and the Central Valley RWQCB to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, an SWRCB statewide NPDES stormwater permit for general construction activity, and any other necessary site-specific WDRs or waivers under the Porter-Cologne Act. As discussed in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, the draft Specific Plan would not violate waste discharge requirements. Through the use of LID and adherence to State and local regulations regarding water quality, implementation of the draft RAAP Specific Plan would result in a *less-than-significant* impact to water quality standards and water discharge requirements.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

The Water Supply Assessment (WSA) (included in Appendix D) assumes that the existing on-site wells and associated water distribution system will be transferred to the Riverbank Local Redevelopment Authority (RLRA) and will continue to supply water to the existing and future uses in the Plan Area. At some point in the future the RAAP water system could be connected to the City of Riverbank water system, so that City water would be available as an auxiliary or backup supply; however, the WSA did not assume the use of any City water after the Specific Plan has been implemented.[11]

Use of the on-sire wells was not evaluated in the UWMP, as discussed in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, but growth in the Plan Area was assumed in the evaluation of projected water demand with-

[11] Weston Solutions, 2013, *SB 610 Water Supply Assessment Final.*

in the City. The UWMP determined that sufficient groundwater supply is available to supply future growth within the City, including the Plan Area. Since the on-site wells draw from the same aquifers as the City of Riverbank wells, it is assumed that the on-site wells will be able to adequately supply the RAAP development with water in normal years, single dry years, and multiple dry years.[12] Because development within the RAAP site will be able to utilize on-site wells, it can be determined that implementation of the Specific Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.[13] A *less-than-significant* impact would occur.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

The draft RAAP Specific Plan proposes significant changes to land uses that would substantially alter the existing drainage pattern of the RAAP site. However, as previously noted, the draft Specific Plan would require implementation of low-impact development (LID) management practices to be employed on a project-by-project basis. The Specific Plan recommends several LID techniques including rain catchments, cisterns, rain gardens, and permeable paving that would reduce runoff volumes and erosion on- and off-site. Additionally, for all future projects under the draft Specific Plan before the approval of grading permits the project applicant would be required to consult with the City, the SWRCB, and the Central Valley RWQCB to acquire the appropriate regulatory approvals that may be necessary to obtain Section 401 water quality certification, an SWRCB statewide NPDES stormwater permit for general construction activity, and any other necessary site-specific WDRs or waivers under the Porter-Cologne Act. Through this process, the implementation of the RAAP Specific Plan on- and off-site erosion and siltation would be considered a *less-than-significant* impact.

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[12] Weston Solutions, 2013, *SB 610 Water Supply Assessment Final.*

[13] Weston Solutions, 2013, *SB 610 Water Supply Assessment Final.*

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

As discussed above in response to criteria c., the proposed RAAP Specific Plan proposes significant changes to land use that would substantially alter the existing drainage pattern of the RAAP site. Although there are no streams or rivers within or adjacent to the RAAP site, alteration of the existing drainage pattern could increase the rate or amount of surface runoff in a manner that could result in flooding on- or off-site. However, because future development would be required to comply with NPDES regulations regulating stormwater runoff volumes and implement the use of low-impact development (LID), surface runoff volumes would be contained on site in detention basins. As a result, a *less-than-significant* impact would occur.

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

A discussion of potential impacts to the existing and proposed stormwater drainage system is included in Chapter 4.17, Utilities and Services Systems. The impact discussion states that upgrades are required in order to improve the existing facilities. However, the stromwater runoff generated within the Specific Plan area will be treated through the use of LID features, as described above in response criteria d. Additionally, as discussed above in response to criteria a., all future projects to be proposed under the RAAP Specific Plan would be subject to grading permits and required to consult with the City, SWRCB and the Central Valley RWQCB. As a result, implementation of the Specific Plan would not result in substantial sources of polluted runoff, and a *less-than-significant* impact would occur.

f. Otherwise substantially degrade water quality.

Impacts to water quality have been described under a. and b. above. The draft Specific Plan proposes industrial, research and development, and retail uses on the site. As discussed above, future development under the draft Spe-

cific Plan would comply with applicable State and local regulations, and therefore would not substantially degrade water quality. Additionally, projects related to industrial activity would be subject to the permit requirements described in Section A.1 of this chapter. No other proposed features of the draft Specific Plan would substantially degrade water quality. As a result, a *less-than-significant impact* would occur.

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

No housing is proposed for the Plan Area nor is the RAAP site located within a 100-year flood hazard area. As a result, *no impact* would occur.

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

The RAAP site is not located within a 100-year flood hazard area. Thus, *no impact* would occur.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

As discussed above, the RAAP site is not located within the 100-year floodplain. A dam failure can occur as the result of an earthquake, as an isolated incident due to structural instability, or during heavy rains that exceeds design capacity. The failure of the New Melones Dam would result in the inundation of the City of Riverbank and the RAAP site. The Riverbank General Plan includes several policies that reduce impacts from dam failure. These policies include Policy SAFE-1.1, SAFE-1.6, SAFE-1.7, SAFE-2.1, and SAFE-2.5. Although these policies provide for human health and safety, property damage could still result during a flood event caused by a catastrophic dam or levee failure. However, this risk is small because the risk of dam failure is small.[14] Furthermore, the United States Bureau of Reclama-

[14] City of Riverbank, *General Plan Recirculated DEIR*, page 4.10-20.

tion continues to maintain the dam to withstand probable seismic activity.[15] As a result, development under the proposed RAAP Specific Plan is considered *less than significant.*

j. Inundation by seiche, tsunami, or mudflow.

The RAAP site is not located adjacent to a large body of water that would result in a risk of tsunamis or seiche. Furthermore given the RAAP site's flat topography, mudflows could not occur. As a result, a *less-than-significant* impact would occur.

2. Cumulative Impacts

This cumulative analysis considers the draft RAAP Specific Plan in the context of development in the City of Riverbank. Development of vacant lands in close proximity to the RAAP site would not be located within the 100-year flood hazard zone. Furthermore, compliance with local stormwater requirements would further address potential impacts resulting from other projects in the vicinity of the RAAP site. In the event of dam failure, the City and its surrounding area, including the Plan Area, could be inundated, but the draft Specific Plan would not exacerbate this condition. Projects under the Specific Plan and other nearby project would be addressed on a project-specific level, the cumulative impact to hydrology and water quality would be considered *less than significant.*

E. Impacts and Mitigation Measures

There are no significant impacts related to hydrology and water quality as a result of the proposed RAAP Specific Plan. Therefore no mitigation measures are required.

[15] City of Riverbank, *General Plan Recirculated DEIR,* page 4.10-20.

4.11 LAND USE

This chapter discusses existing land uses in the Plan Area and describes plans applicable to the Plan Area. It also provides an evaluation of potential land use and planning impacts associated with buildout of the Plan.

A. Regulatory Framework

This section summarizes federal, State, and local policies and regulations that apply to land use on the RAAP site.

1. Defense Base Closure and Realignment Act

The Defense Base Closure and Realignment Act of 1990 established the Base Realignment and Closure Commission (BRAC), which made recommendations for closing a number of United States military bases in 2005, including the Riverbank Army Ammunitions Plant (RAAP). As part of the BRAC process, the federal government and the Department of Defense recognize a local redevelopment authority (LRA) as the entity responsible for creating a base reuse plan to determine future use, mitigate any constraints on the property, and transfer ownership to a local jurisdiction. Recognized as the LRA for the RAAP, the City of Riverbank adopted a base reuse plan in 2008.

2. RAAP Base Reuse Plan

The RAAP Base Reuse Plan establishes a strategy that involves redeveloping the RAAP Site as an industrial park focused on green industries and augmenting existing research and development activities and office uses on-site. The Plan also calls for new convenience retail development in the western portion of the RAAP site.

Another primary goal of the Base Reuse Plan is to create a framework for addressing pollution at the site, which is listed as a federal Superfund site due to groundwater contamination and other remnant pollutants from past industrial uses on-site.

3. City of Riverbank General Plan

The Riverbank General Plan guides development in the city through 2025. The General Plan Land Use Element addresses land use within the city limit, including the Plan Area, establishing specific land uses in order to express the desired development pattern in the city. General Plan policies seek to encourage a diverse balance of land uses, manage urban growth in a way that benefits the whole community, and revitalize and develop commercial and industrial uses that contribute to the health, welfare, and vitality of the community. Riverbank General Plan polices related to Land Use are shown in Table 4.11-1, and land uses as proposed by the General Plan are Industrial/Business Park and Medium-Density Residential, as shown in Figure 4.11-1.

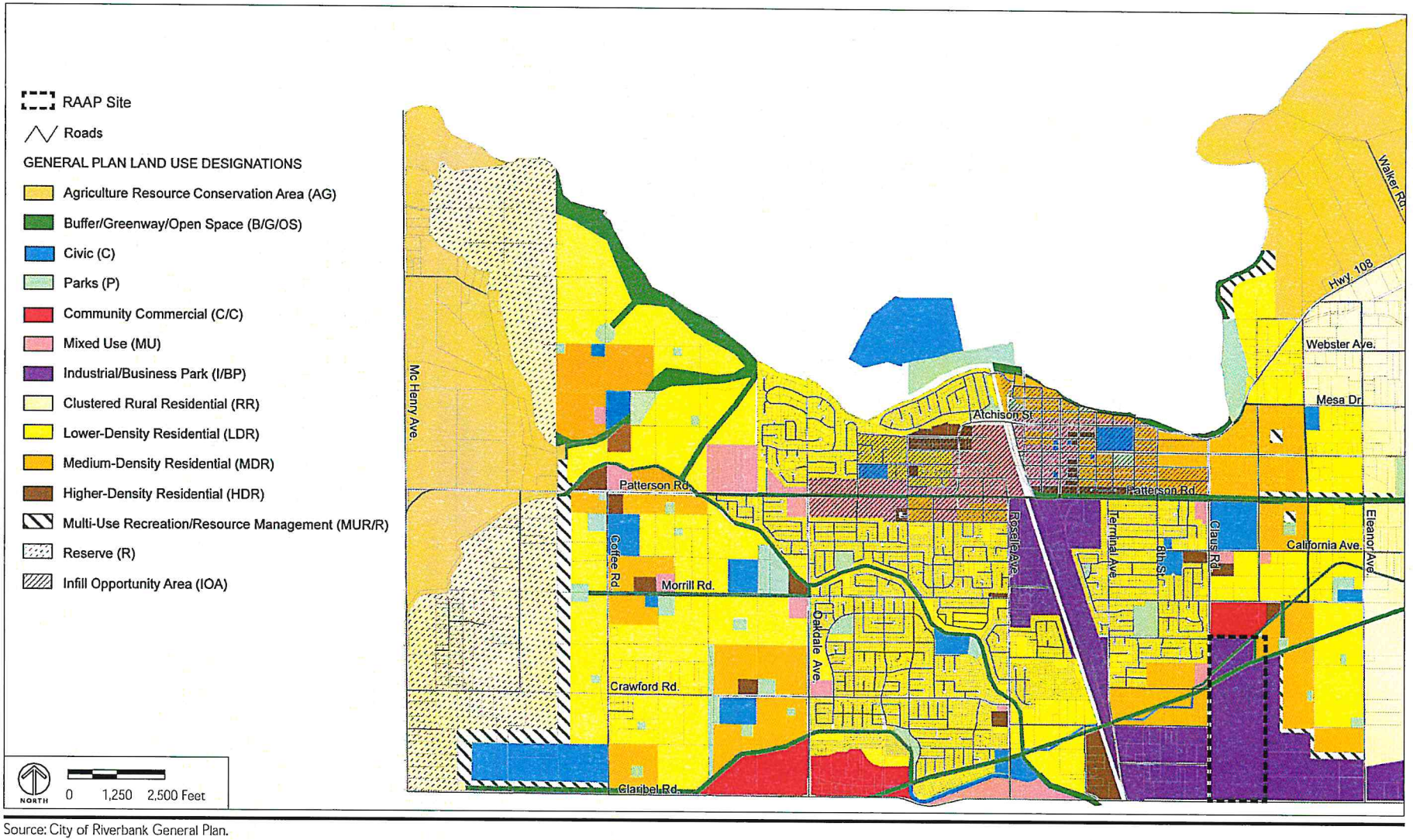
4. City of Riverbank Municipal Code

Title XV of the Riverbank Municipal Code regulates land use in the city. It describes zones and contains the Zoning Map as well as development standards for the zones. Title XV is the mechanism used to implement the goals, objectives, and policies of the existing General Plan and to regulate all land use within the city. The RAAP site is currently zoned Light Industrial (M-1).

B. Existing Conditions

The RAAP site contains a variety of uses, ranging from vacant, undeveloped land to intensively developed industrial uses. The RAAP site contains over 150 buildings and structures and about 920,000 square feet of roofed areas, and contains a rail spur providing freight access to the site. Table 4.11-2 provides a list of the site characteristics regarding the main physical characteristics of the built square footage, open space, and roads within the site, and the following provides an overview of uses within the site.

- **Existing Industrial Area.** The developed portion of the RAAP is located in the central area of the site. Buildings in this developed area generally have large setbacks from public rights-of-way. The area's primary entries and parking lots are located adjacent to Claus Road, along the southern half of the site. The existing industrial area contains a wide



Source: City of Riverbank General Plan.

FIGURE 4.11-1
RIVERBANK GENERAL PLAN LAND USES

TABLE 4.11-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO LAND USE**

Goal/Policy Number	Goal/Policy Content
Policy LAND-1.2	The City supports LAFCO policy to develop vacant and underutilized land within the City prior to entertaining any annexation if such land can meet the same need as the land proposed for annexation.
Policy LAND-2.1	Approved specific plans shall include a variety of land uses, including a variety of housing types, mixed in geographic proximity, in proportions and locations illustrated by the General Plan Land Use Diagram.
Policy LAND-3.3	The City will encourage "compact development," which places origination and destination points closer together (residence, stores, schools, places of work, etc.), allowing for alternatives to vehicular travel.
Policy LAND-3.4	Gated projects are permissible only if connectivity with surrounding areas will not be significantly impaired. The City maintains the sole authority to approve a project that includes gates exclusively in cases where a property is located where through connections would not be possible to other existing developed or planned future developed areas. The City will not allow gates in unless fire access can be guaranteed according to Stanislaus Consolidated Fire Protection District. This exception to the general preference for connectivity and access can be made where a project consists solely of unique and locally desired land uses, such senior housing. See also policies DESIGN-3-3 and DESIGN-3.6.
Goal LAND- 4	**Commercial and industrial development contributes to the health, welfare, and vitality of the community.**
Policy LAND- 4.1	The City and Redevelopment Agency will encourage, through incentives, streamlining, flexible standards, and other means, development of employment-generating uses.
Policy LAND- 4.2	The City will encourage the revitalization of existing commercial areas through flexible development standards, public investment, property assemblage, incentives, streamlined entitlement processes, catalyst projects, public-private partnerships, and other means.
Policy LAND- 4.3	The City will encourage and assist small, locally-owned businesses that wish to locate, expand, or simply continue to do business in Riverbank through flexible development standards, public investment, property assemblage, incentives, streamlined entitlement processes, public private partnerships, and other means.

TABLE 4.11-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO LAND USE** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy LAND- 4.4	Industrial uses that create noise, air emissions, traffic, or other substantial incompatibilities with residential uses shall be buffered or otherwise designed to avoid such impacts to new and existing residential areas.
Policy LAND- 4.5	The City will review industrial development applications and apply appropriate conditions to ensure compatibility with nearby existing and planned land uses.
Policy LAND-5.5	Approved projects, plans, and subdivisions in new growth areas will set aside adequate land for, and shall otherwise accommodate public infrastructure and service needs consistent with General Plan policy.
Policy LAND-6.1	The City will review the Land Use Element at least every five years to ensure that it remains responsive to the community's vision with respect to changing conditions.
Policy LAND-6.2	Development applications shall be reviewed and approved only if consistent with the Riverbank General Plan.
Goal ED-1	**Continue to make economic development a priority in Riverbank.**
Policy ED- 2.5	The City of Riverbank will take a targeted approach to business attraction that focuses on industry sectors that help the City address the following priorities: ♦ Attract businesses that tie into regional growth opportunities ♦ Attract businesses that address local-serving and regional retail market opportunities ♦ Attract uses that contribute towards a vibrant and revitalized downtown district.
Goal ED-6	**Diversify Riverbank's core industries by promoting the development of an industrial base that ties into regional opportunities.**
Policy ED-6.1	Acknowledging the significant agricultural economy in Stanislaus County, the City will continue to accommodate industries that serve the agricultural trade and have supplier relationships with primary farming activity in Stanislaus and San Joaquin counties.
Policy ED-6.4	The City will explore business development opportunities with durable manufacturing industries. Even though this sector is projected to continue growing within Stanislaus County, the City should continue to be open to other sources of business growth such as global trade.

TABLE 4.11-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO LAND USE** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy ED-6.8	The City will maximize business development opportunities resulting from Riverbank's proximity to active railroad spurs and short-line railroad operations, and opportunities from other activities tied to container shipping and regional port activities.
Policy ED-6.9	Business attraction activities by the City will continue to explore opportunities for developing transloading facilities and comparable activities along the existing railroad spurs, and identify any needs to relocate these spurs.
Policy ED-6.10	As part of its ongoing economic development programs, the City will actively pursue business development opportunities related to transportation and distribution activities as these activities continue to grow throughout Stanislaus and San Joaquin counties.
Policy ED-6.11	The City will explore opportunities for new medical offices to locate in Riverbank to serve the growing and aging population.

Source: City of Riverbank General Plan 2005-2025.

TABLE 4.11-2 **EXISTING SITE CHARACTERISTICS**

Site Components	Area (Acres)
RAAP Production Area	99
Open Land	37
Roads, Rights-of-Way, and Easements	10
Total Acreage	**146**

Source: Riverbank Local Redevelopment Authority, Base Reuse Plan, 2008.

variety of industrial uses and structures, including large buildings that were used to produce ammunition, storage structures, smaller manufacturing buildings, and outdoor storage. In addition to industrial facilities and storage areas, the existing industrial area contains parking areas, in-

ternal roads, limited undeveloped areas, and a former landfill that is now capped.

- **Vehicle Storage.** A small vehicle storage lot is located along Claus Road, between its intersections with Minniear Avenue and Van Dusen Avenue. Spaces in this area are currently being leased for storage of vehicles, primarily recreational vehicles. The lot operates independently of the existing industrial uses and is located outside the fences that contain most of these buildings.
- **Undeveloped Land.** A large portion of the RAAP site remains undeveloped. Undeveloped areas south of the existing industrial areas, along Claribel Road, are fenced off from the remainder of the RAAP site. The undeveloped areas in the northern portions of the site were historically used as pastures for livestock grazing.
- **Stormwater Pond.** As indicated in green on Figure 2-1, a stormwater pond is currently located between two easements in the northern portion of the site. This area serves as detention for stormwater runoff from the existing industrial areas.
- **Hetch Hetchy Aqueduct.** The Hetch Hetchy Aqueduct conveys water underground and also serves as a right-of-way for the conveyance of electricity through large overhead power lines. The Hetch Hetchy Aqueduct right-of-way runs roughly east-west across the site and is approximately 100 feet wide. It is owned by the San Francisco Public Utilities Commission (SFPUC).
- **Oakdale Irrigation District.** The Oakdale Irrigation District (OID) canal is located near the northern portion of the site and runs from the northeast to the southwest. The canal's right-of-way easement is approximately 60 feet wide, and the actual infrastructure for the canal is located underground.
- **Rail Easement.** An active rail line surrounded by a 50-foot easement enters the RAAP site at its northwest corner, near Townsend Avenue. The rail, which connects to the Burlington Northern Sante Fe rail line, runs across the undeveloped areas in the north and crosses both the Hetch

Hetchy Aqueduct and the Oakdale Irrigation District canal. Ultimately, the rail enters the existing industrial areas, splits and serves many of the existing buildings.

C. Standards of Significance

The Plan would have a significant land use-related impact if it would:

a. Physically divide an established community.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

c. Create or exacerbate a conflict between land uses on the project site and in the surrounding area.

D. Impact Discussion

1. Project Impacts

a. Physically divide an established community.

The Plan would have a significant environmental impact if it would divide the physical arrangement of an established community. As described above, the Plan Area is surrounded largely by low density residential development and semi-agricultural lands. The proposed Plan would involve the redevelopment of the Plan Area entirely within its current boundaries. Therefore, buildout of the Plan would not divide an established community and impacts would be *less than significant.*

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordi-

nance) adopted for the purpose of avoiding or mitigating an environmental effect.

As discussed in Chapter 3, the RAAP Specific Plan includes adoption of amendments to the Riverbank General Plan and Zoning Ordinance, changing the current land use designations in the Plan Area, and establishing new development standards to replace some of the current zoning provisions applicable to the Plan Area. These amendments must be completed to ensure consistency between the Specific Plan, General Plan, and Zoning Ordinance. The City would adopt these amendments as required by State law.

i. General Plan Consistency

Currently, the General Plan designates the majority of the RAAP site as Industrial/Business Park, and a small area in the northeast corner as Medium-Density Residential. As shown in Figure 3-8, the RAAP Specific Plan would re-designate the RAAP site using existing designations already identified in the General Plan. While the Specific Plan would require General Plan Amendments to bring it into full compliance, the Specific Plan is consistent with the intent of the City's General Plan. For example, the Economic Development Element of the Riverbank General Plan contains a specific set of goals and policies that have the goal of planning for a community where businesses can thrive and attract wealth, create jobs and income growth for local residents, generate revenue for local government, serve local market needs, and help revitalize older neighborhoods. Goal ED-3 is to strengthen existing industry concentrations in Riverbank and retain jobs in viable economic sectors. To achieve this goal, Policy ED-3.1 states that the City will continue to place a priority on local business retention, with a focus on retaining those businesses that are significant sources for jobs and/or tax revenue for the City. Policy ED-3.3 states that existing industries in Riverbank and Stanislaus County will be strengthened by exploring business attraction opportunities for comparable businesses that can create supplier relationships and clustered industry activity where businesses benefit from operating in close proximity to their clients.

Furthermore, Goal ED-6 is to diversify Riverbank's core industries by promoting the development of an industrial base that ties into regional opportunities. Because the RAAP site no longer serves as a production facility for the US military, existing infrastructure within the site can be utilized to promote the development of an industrial base that ties into regional opportunities.

As mentioned above, the General Plan designates a portion of the RAAP site as medium-density residential. The RAAP Specific Plan and Base Reuse Plan do not provide any residential uses for the RAAP site. As discussed in Chapter 4.9, Hazards and Hazardous Materials, the site is currently a contaminated site and remediation is ongoing. Although site cleanup will be completed, in order for the site to be suitable for residential uses, intensive remediation would be required. Additionally, the placement of residential units on the same parcel as industrial uses could contribute to a conflict within the RAAP site.

Therefore, while the Specific Plan would require a General Plan Amendments to bring the General Plan and Specific Plan into complete conformance, the Specific Plan has been developed to implement the intent of the General Plan. Therefore, the Specific Plan would result in a *less-than-significant* impact.

ii. Zoning Consistency Analysis

The RAAP site is currently zoned Light Industrial. A zoning amendment will be required to ensure that the current uses at the RAAP are conforming. Additionally, a zoning amendment will also be required to allow

The Specific Plan contains a chapter identifying development standards for new projects within the Plan Area. The development standards will modify the allowable uses and development standards in the existing Zoning Ordinance. The proposed project includes a zoning overlay district that will be added to the existing Zoning Ordinance. The zoning overlay district boundaries will be consistent with the Specific Plan Area. For those provisions not modified by the Specific Plan, the similar zoning classifications in the City's existing Zoning Ordinance will apply. Should conflicts exist between the

Specific Plan and Zoning Ordinance, the provisions in the Specific Plan will apply. Following modification, the RAAP Specific Plan will be consistent with the Zoning Ordinance. As a result, the RAAP Specific Plan will not conflict with the Zoning Ordinance, and a *less-than-significant* impact would occur.

iii. Base Reuse Plan compatibility

The Base Reuse Plan proposes that the RAAP site will continue to function primarily as an industrial park, along with some limited convenience retail uses. As stated above, this approach is generally consistent with the land use designations proposed in Riverbank's General Plan with job creation and current tenant expansion being the top priorities for the community, no other significant land uses were considered viable in reaching the community goals. Although the Specific Plan differs in specific land use locations, the RAAP Specific Plan does not conflict with the intent of the Base Reuse Plan, and a *less-than-significant* impact would occur.

c. Create or exacerbate a conflict between land uses on the project site and in the surrounding area.

The Plan would result in a significant impact if it would create new conflicts or exacerbate existing conflicts between land uses in the Plan Area, and on surrounding properties.

The industrial uses currently on the RAAP site contrast markedly with the surrounding residential and semi-agricultural uses. While buildout of the Plan would generally represent a continuation of existing uses, the contrast of industrial activity with surrounding uses would remain. However, through the implementation of design features such as 20-foot planter strip at the outside edge that provides a landscape buffer and a 10-foot minimum wide sidewalk/bike path. Policy TRAN-2 requires that, on new public streets built in the Specific Plan Area, landscaped planting strip to buffer sidewalks from roadways to be implemented. Moreover, the addition of regional and local commercial and retail uses to the RAAP site would serve to better integrate the Plan Area into the surrounding community. Specifically, the areas of the

RAAP site designated as Community Commercial are anticipated to be developed for retail, employment, and/or commercial services, and are located along major roadways on the periphery of existing and planned neighborhoods. Overall, impacts related to land use conflicts would be *less than significant.*

2. Cumulative Impacts

Cumulative effects occur from development under the proposed Plan combined with effects of development on adjacent lands in Riverbank and Stanislaus County. The geographic scope of analysis is taken as the City of Riverbank sphere of influence (SOI). A cumulative effect would be significant if it would divide an established community, conflict with established plans, policies and regulations, or either create or exacerbate land use conflicts in the Plan Area or lands adjacent.

Upon adoption of the Specific Plan, development of the Plan Area would be consistent with applicable plans, goals, policies, and regulations of the Riverbank General Plan and Municipal Code. Buildout of the Plan Area under the Specific Plan would also be within the envelope for buildout of the City per the General Plan. Because the Specific Plan provides development concepts to enhance an existing industrial site, the Specific Plan would not create a conflict in land uses. Furthermore, any conflicts would be reduced through the implementation of Specific Plan policies.

Implementation of cumulative development in accordance with the City's General Plan and the Specific Plan would not result in cumulatively considerable land use impacts, and as a result, there would therefore be *no cumulative impact.*

E. Impacts and Mitigation Measures

Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.

4.12 NOISE

This section describes the potential effects of the reuse of Riverbank Army Ammunition Plant (RAAP) on noise. Included in this chapter is background information on noise and vibration, a brief summary of the regulatory framework that pertains to the analysis of noise impacts attributable to the Specific Plan, and a summary of the noise monitoring survey made in the site vicinity.

A. Background Information on Noise and Vibration

This section provides background on noise and vibration in order to provide a clearer understanding of this chapter.

1. Noise and Vibration Concepts

a. Terminology

There are several noise measurement scales that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level (dBA). All sound levels in described in this EIR are A-weighted, unless reported otherwise. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but it can be of any duration.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Day/Night Average Sound Level, L_{dn}, is a measure of the cumulative noise exposure in a community, with a 10 dB addition to nocturnal (10:00 p.m. – 7:00 a.m.) noise levels. Technical terms are defined in Table 4.12-1. Representative outdoor and indoor noise levels are shown in Table 4.12-2.

b. Effects of Noise

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and about 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise above 35 dBA and fluctuating noise levels above about 45 dBA has been shown to affect sleep.

Causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. The threshold for annoyance from vehicle noise is about 55 dBA L_{dn}. At an L_{dn} of about 60 dBA, approximately 8 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 20-25 percent of the population. There is, therefore, an increase of about two percent per dBA between an L_{dn} of 60 to 70 dBA.

c. Ground-Borne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods are typically used to quantify the amplitude of vibration including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the average of the squared amplitude of the signal. PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

TABLE 4.12-1 **DEFINITION OF ACOUSTICAL TERMS**

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	Decibel level as measured using the A-weighting filter network which de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlating well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels measured from 7:00 pm to 10:00 pm and 10 decibels to sound levels measured between 10:00 pm and 7:00 am.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	Noise which intrudes over and above the existing ambient noise at a given location. Relative intrusiveness depends on amplitude, duration, frequency, time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

TABLE 4.12-2 **TYPICAL SOUND LEVELS**

Outdoor Sound	dBA	Indoor Sound	Threshold
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110		
Diesel Pile Driver (100')	100	Rock Music Concert	Very Loud
	90	Boiler Room Printing Press Plant	
Freight Cars (50')	80		
	70	In Kitchen With Garbage Disposal Running	Moderately Loud
Freeway (100') Vacuum Cleaner (10')	60	Data Processing Center	
Light Traffic (100') Large Transformer (200')	50	Department Store	
	40	Private Business Office	
Soft Whisper (5')	30	Quiet Bedroom	Quiet
	20	Recording Studio	
	10		
	0		Threshold of Hearing

Table 4.12-3 displays continuous vibration impacts on human annoyance and on buildings. As discussed previously, annoyance is a subjective measure and vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

TABLE 4.12-3 **REACTION OF PEOPLE AND DAMAGE TO BUILDINGS FOR CONTINUOUS VIBRATION LEVELS**[a]

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception: Possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of "architectural" damage to normal dwellings such as plastered walls or ceilings.
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause "architectural" damage and possibly minor structural damage.

[a] Caltrans, Technical Advisory, 2002. Transportation Related Earth-borne Vibrations, TAV-02-01-R9601.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where ground-borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure

and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.2 to 0.3 mm/sec (0.008 to 0.012 inches/sec), PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels such as people in an urban environment may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

Railroad operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of railroad track. People's response to ground vibration has been correlated best with the velocity of the ground. The velocity of the ground is expressed on the decibel scale. The reference velocity is 1×10^{-6} in./sec. RMS, which equals 0 VdB, and 1 in./sec. equals 120 VdB. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

One of the problems with developing suitable criteria for ground-borne vibration is the limited research into human response to vibration and more

importantly human annoyance inside buildings. The U.S. Department of Transportation, Federal Transit Administration has developed rational vibration limits that can be used to evaluate human annoyance to ground-borne vibration. These criteria are primarily based on experience with passenger train operations, such as rapid transit and commuter rail systems. The main difference between passenger and freight operations is the time duration of individual events; a passenger train lasts few seconds whereas a long freight train may last several minutes, depending on speed and length.

B. Regulatory Framework

Regulatory criteria have been developed to minimize noise and vibration exposure at sensitive land uses. This section describes the regulatory framework related to noise and vibration in the Specific Plan area.

1. Federal

a. Federal Transit Administration

The Federal Transit Administration (FTA) has identified vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. The thresholds for residences and buildings where people normally sleep (e.g. nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day). Table 4.12-4 summarizes the FTA's vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads.

2. Local Regulations

a. City of Riverbank General Plan 2005-2025.

The City of Riverbank has established policies in the Noise Element of the General Plan to guide the development of new land uses. The following goals and policies are applicable in the assessment of impacts resulting from the proposed development:

TABLE 4.12-4 **GROUND-BORNE VIBRATION IMPACT CRITERIA**

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 µinch/sec, RMS)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1 Buildings where vibration would interfere with interior operations.	65 VdB	65 VdB	65 VdB
Category 2 Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3 Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

[a] "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
[b] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
[c] "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
Source: U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, FTA-VA-90-1003-06.

Goal NOISE-1: Create Land Use Patterns and Transportation Networks that Minimize Noise Problems

Policy NOISE-1.1 Large-scale commercial land uses requiring frequent large truck deliveries shall not be developed within new or existing neighborhoods.

Policy NOISE-1.3 Industrial and other noise-generating land uses shall be located away from noise-sensitive land uses or shall enclose any substantial noise sources completely within buildings or structures.

Policy NOISE-1.5 Soundwalls are prohibited as a method for reducing noise exposure that could be addressed through other means.

Goal NOISE-2: Minimize Noise Impacts Associated with Development Projects and other Land Use Change

Policy NOISE-2.1 Development projects and roadway improvement projects that increase traffic noise levels shall be mitigated to achieve acceptable levels specified in Table N-1 (Table 4.12-5) as measured at outdoor activity areas and interior spaces of existing and planned noise sensitive land uses. If existing noise levels exceed allowable levels in Table N-1 (Table 4.12-5) at noise sensitive land uses, then:

- Where existing exterior noise levels are between 60 and 65 dB L_{dn} at outdoor activity areas of noise-sensitive uses, an increase of 3 dB L_{dn} or greater is considered significant and requires mitigation to achieve allowable levels.
- Where existing exterior noise levels are greater than 65 dB L_{dn} at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dB L_{dn} or greater is considered significant and requires mitigation to achieve allowable levels.
- Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed, provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with Table N-1 (Table 4.12-5).

Policy NOISE-2.2 Development projects that produce, or are affected by, non-transportation related noise shall be mitigated to achieve acceptable levels specified in Table N-2 (Table 4.12-6), as measured at outdoor activity areas of existing and planned noise-sensitive land uses. If existing noise levels exceed acceptable levels in Table N-2 (Table 4.12-6) as measured at outdoor activity areas of noise sensitive land uses:

TABLE 4.12-5 **NOISE AND LAND USE COMPATIBILITY CRITERIA**

Land Use	Outdoor Activity Areas (dB L_{dn})	Interior Spaces	
		dB L_{dn}	dB L_{eq}
Residential	60	45	--
Transient Lodging	60	45	--
Hospitals, Nursing Homes	60	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	60	--	45
Playgrounds, Neighborhood Plans	70	--	--

Notes: Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e. patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way. Where development projects or roadway improvement projects could potentially create noise impacts, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall include site planning and design over other types of mitigation.
Source: City of Riverbank, Riverbank General Plan 2005-2025, Page NOISE-5.

- Where existing exterior noise levels are between 60 and 65 dB at outdoor activity areas of noise-sensitive uses, an increase of 3 dB or greater is considered significant and requires mitigation to achieve acceptable levels.
- Where existing exterior noise levels are greater than 65 dB at outdoor activity areas of noise-sensitive uses, an increase of 1.5 dB or greater is considered significant and requires mitigation to achieve acceptable levels.

TABLE 4.12-6 **NON-TRANSPORTATION NOISE SOURCE CRITERIA**

Noise Level Descriptor	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Hourly L_{eq}	60 dB	45 dB
L_{max}	75 dB	65 dB

Notes: Each of the noise levels specified shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwellings).

- Where it is not possible to reduce noise in outdoor activity areas to 60 dB or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB may be allowed, provided that available exterior noise level reduction measures have been implemented.

Policy NOISE-2.3 The City shall require all feasible noise mitigation to reduce construction and other short-term noise and vibration impacts as a condition of approval for development projects by applying the performance standards outlined in TABLE N-3 (Table 4.12-7). The total noise level resulting from new sources and ambient noise shall not exceed the standards in Table N-3 (Table 4.12-7), as measured at outdoor activity areas of any affected noise sensitive land use except:

- If the ambient noise level exceeds the standard in Table N-3 (Table 4.12-7), the standard becomes the ambient level plus 5 dB(A).
- Reduce the applicable standards in Table N-3 (Table 4.12-7) by 5 decibels if they exceed the ambient level by 10 or more decibels.

b. Riverbank Code of Ordinances

The City of Riverbank sets goals and polices in the Noise Chapter (93) of Title IX: General Regulations to protect noise-sensitive uses (residential areas,

TABLE 4.12-7 **NON-TRANSPORTATION NOISE SOURCE CRITERIA**

Cumulative Duration of a Noise Event[a] (Minutes)	Maximum Exterior Noise Level Standards[b]	
	Daytime[c,e]	Nighttime[d,e]
30-60	50	45
15-30	55	50
5-15	60	55
1-5	65	60
0-1	70	65

[a] Cumulative duration refers to time within any one-hour period.
[b] Noise level standards measured in dB.
[c] Daytime = hours between 7:00 a.m. and 10:00 p.m.
[d] Nighttime = hours between 10:00 p.m. and 7:00 a.m.
[e] Each of the noise level standards shall be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e. sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

motels, hospitals, nursing homes, theatres, auditoriums, schools, playgrounds, offices, etc.) from excessive noise.

Exterior Noise Standards

(A) It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in (Table 4.12-8).

TABLE 4.12-8 **EXTERIOR NOISE LEVEL STANDARDS**

Time Period	Allowable Equivalent Hourly Sound Level (L_{eq})	Allowable Maximum Sound Level (L_{max})
7 a.m. - 10 p.m.	50 dBA	70 dBA
10 p.m. - 7 a.m.	45 dBA	65 dBA

(B) In the event the measured ambient noise level exceeds the applicable noise level standard, the applicable standard shall be adjusted so as to equal the ambient noise level.

(C) Each of the noise level standards specified above shall be reduced by five dB(A) for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.

D) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period so that the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared to the noise level standards specified above.

C. Existing Conditions

The RAAP site is bordered by farmland to the north and east, Claribel Road the south, and Claus Road to the west. The primary sources of noise affecting the area are vehicular traffic along major roadways. A noise monitoring survey was conducted from July 16, 2009 to July 17, 2009 to quantify ambient noise levels in the Plan Area vicinity. The noise monitoring survey consisted of four long-term (24-hour) noise measurements (LT1, LT2, LT3, and LT4) and two short-term (10 to 20 minutes) noise measurements (ST1 and ST2) of the predominant noise sources affecting the Specific Plan area. Noise meas-

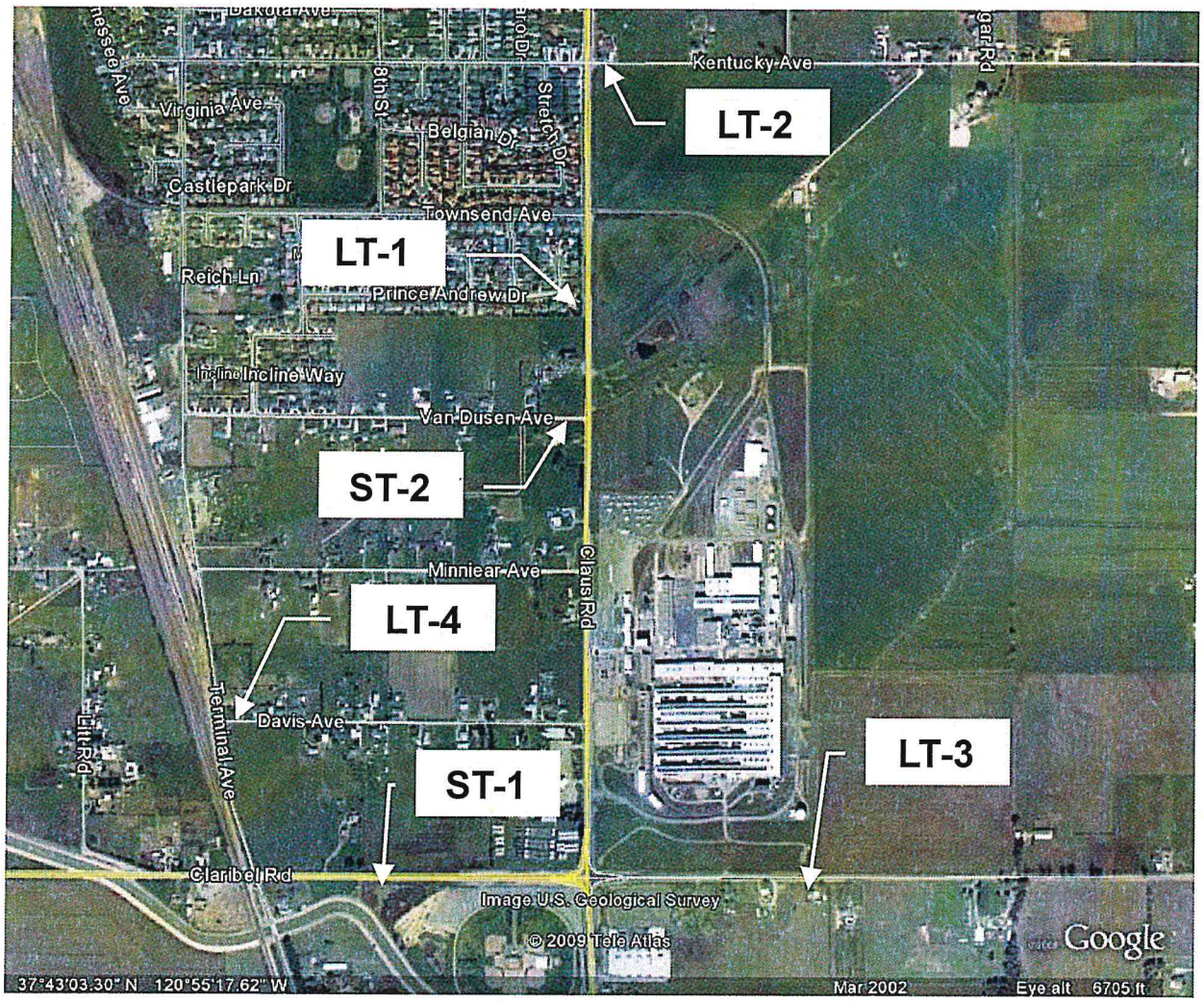
urement locations were chosen after visiting and observing the Plan Area. These locations were selected to include the locations representative of noise sensitive uses. Figure 4.12-1 shows the locations of noise measurements made during the noise monitoring survey.

Sites LT1 and LT2 were chosen to monitor noise levels along Claus Road north of Van Dusen Avenue. Sites LT3 and LT4 were chosen to monitor noise levels along Claribel Road east of Claus Road, and Terminal Avenue and the Railroad spur, respectively. Sites ST1 and ST2 were selected to measure noise levels along Claus Road south of Van Dusen Avenue and Claribel Road west of Claus Road, respectively.

Long-term noise measurement LT1 was 45 feet from the center of the nearest lane of Claus Road between Van Dusen Avenue and Townsend Avenue. The primary noise source at location LT1 was traffic along Claus Road. Hourly average noise levels ranged from about 69 dBA L_{eq} to 73 dBA L_{eq} during the daytime and from about 65 dBA L_{eq} to 69 dBA L_{eq} at night. The calculated day-night average noise level at this location was 75 dBA L_{dn}. Figure 4.12-2 shows the daily trend in noise levels at LT1.

Measurement location LT2 was 92 feet from the center of the nearest lane of Claus Road, at the intersection with Kentucky Avenue. Ambient noise levels measured at this site were primarily the result of automobile traffic along Claus Road. Hourly average noise levels ranged from about 63 dBA L_{eq} to 69 dBA L_{eq} during the day and from about 56 dBA L_{eq} to 62 dBA L_{eq} at night. The calculated day-night average noise level at this location was 68 dBA L_{dn}. Figure 4.12-3 shows the daily trend in noise levels at LT2.

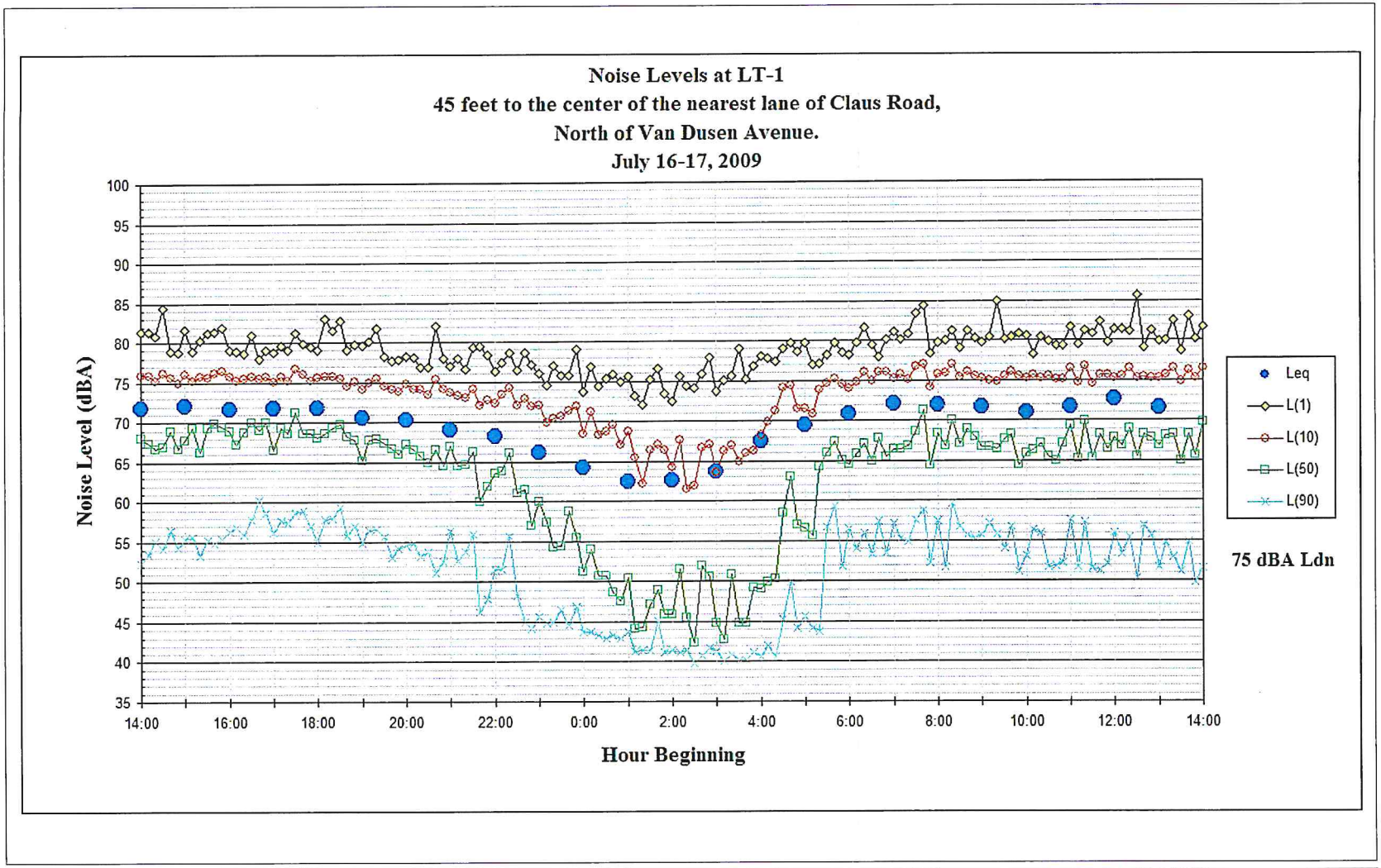
Long-term noise measurement LT3 was 46 feet from the center of the nearest lane of Claribel Road. The primary noise source at this location was traffic along Claribel Road. Hourly average noise levels ranged from about 60 dBA L_{eq} to 66 dBA L_{eq} during the day and from about 55 dBA L_{eq} to 62 dBA L_{eq} at night. The calculated day-night average noise level at this location was 67 dBA L_{dn}. Figure 4.12-4 shows the daily trend in noise levels at LT3.



Source: Illingworth & Rodkin, 2012.

FIGURE 4.12-1

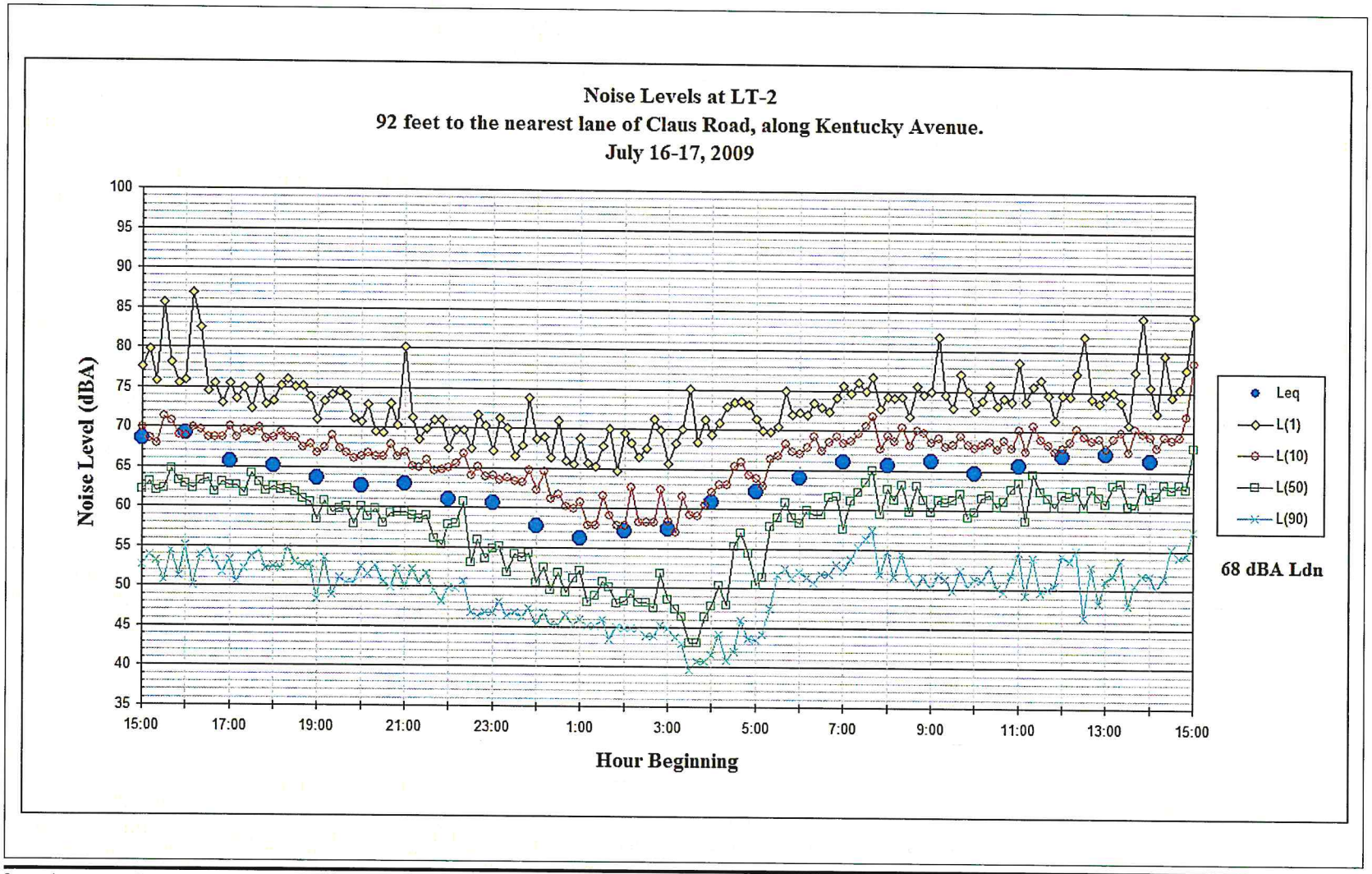
NOISE MEASUREMENT LOCATIONS



Source: Illingworth & Rodkin, 2012.

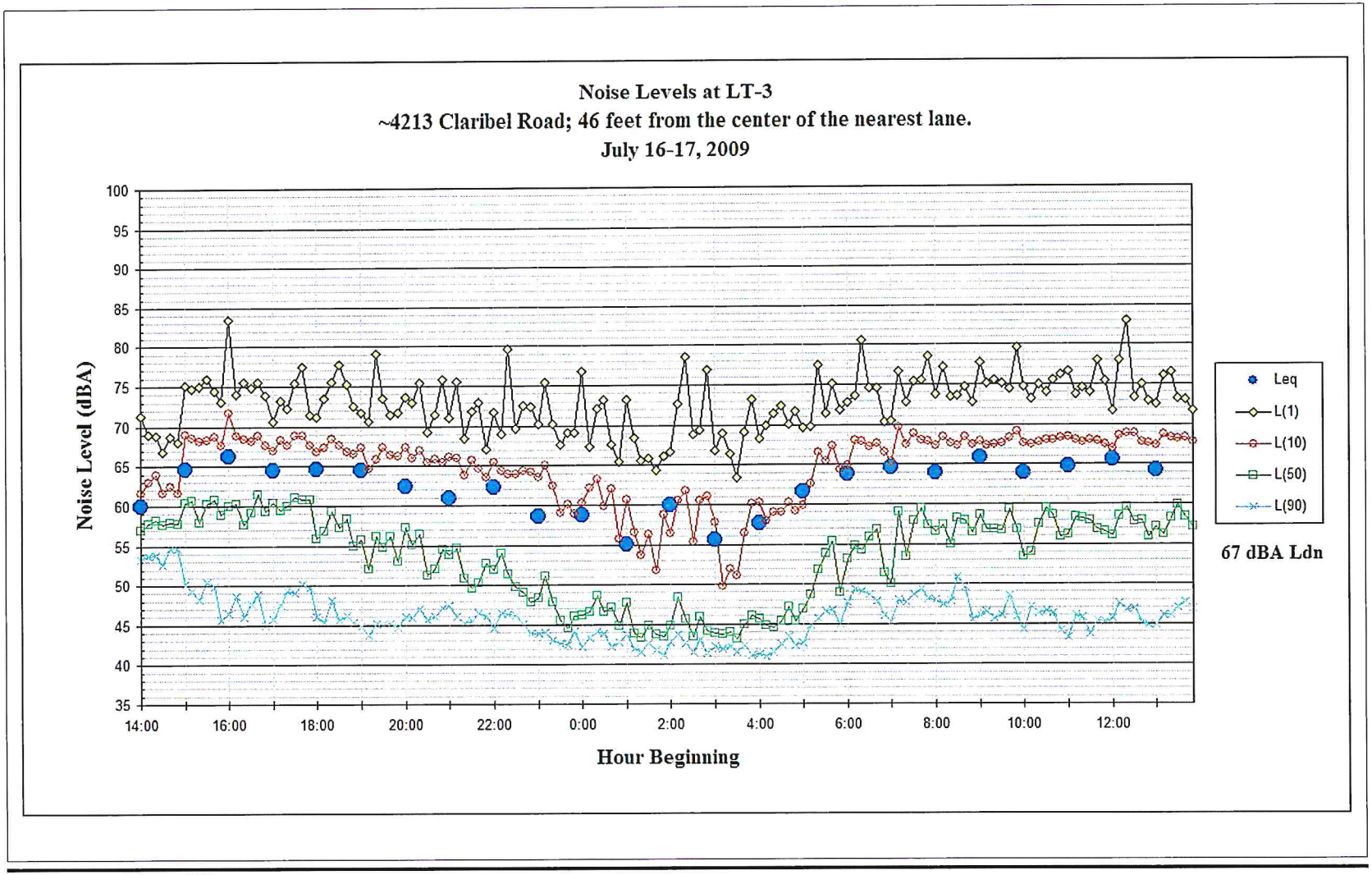
FIGURE 4.12-2

NOISE LEVELS AT LT1



Source: Illingworth & Rodkin, 2012.

FIGURE 4.12-3
NOISE LEVELS AT LT2



Source: Illingworth & Rodkin, 2012.

FIGURE 4.12-4

NOISE LEVELS AT LT3

Measurement location LT4 was 75 feet from the center of the nearest lane of Terminal Avenue and 167 feet from the nearest train tracks. Primary noise sources at location LT4 included automobile traffic along Terminal Avenue and train noise along the railroad. Hourly average noise levels ranged from about 63 dBA L_{eq} to 78 dBA L_{eq} during the day and from about 54 dBA L_{eq} to 76 dBA L_{eq} at night. The calculated day-night average noise level at this location was 75 dBA L_{dn}. Figure 4.12-5 shows the daily trend in noise levels at LT4.

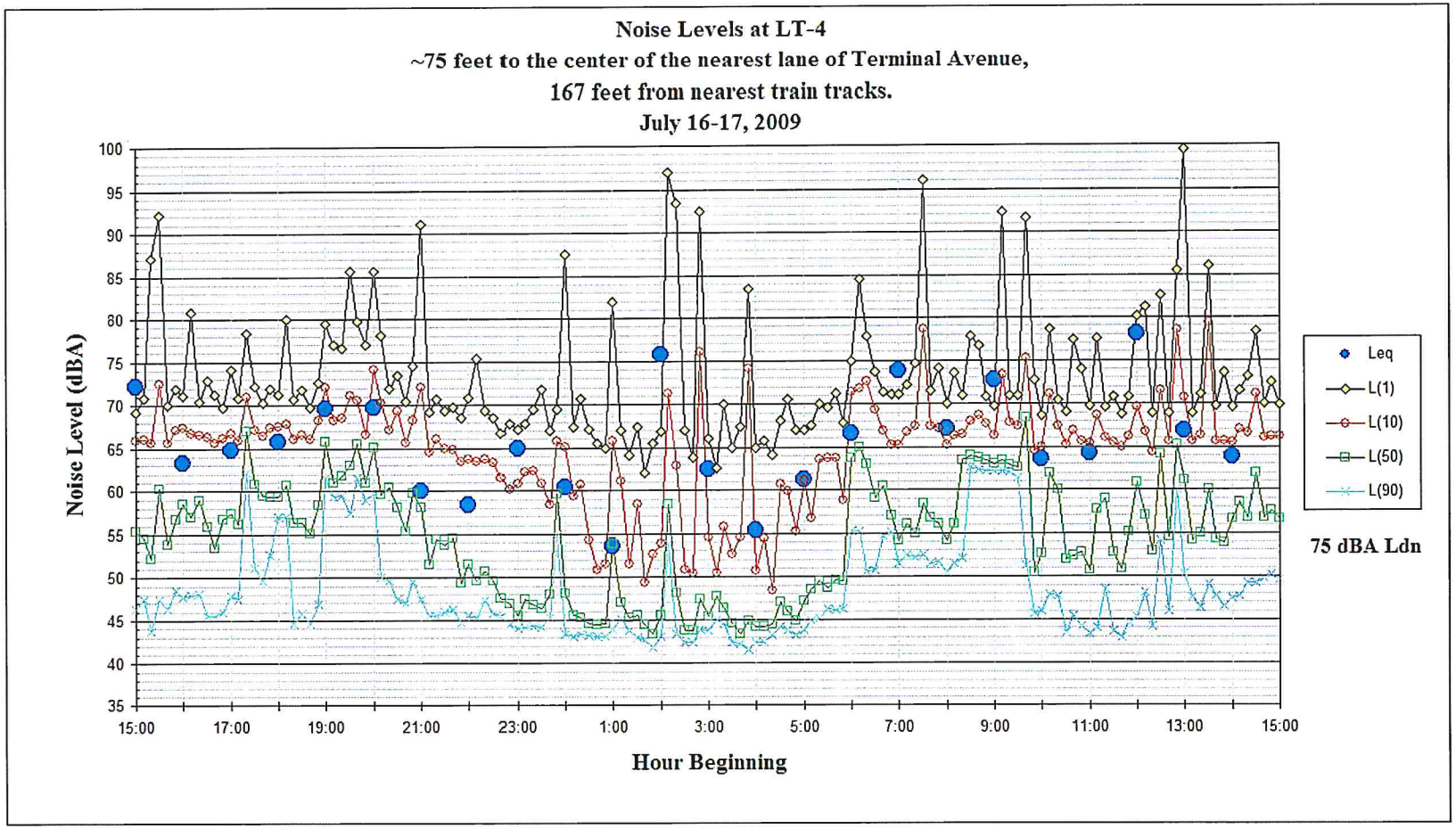
Short-term noise measurements were made on the afternoon of July 17, 2007. The short-term noise measurements were made at two locations as shown in Figure 4.12-1. Table 4.12-9 summarizes the short-term noise level data. Noise measurement ST1 was 52 feet from the centerline of Claribel Road. Noise levels measured at this location were primarily the result of traffic along Claribel Road. The average noise level was 65 dBA L_{eq}. Maximum noise levels resulting from local traffic reached 81 dBA L_{max}. Traffic that passed during a 10-minute portion of the measurement included 72 automobiles, four heavy trucks, and one medium sized truck. In addition, a freight train passed approximately 785 feet away.

TABLE 4.12-9 **SHORT-TERM NOISE LEVEL DATA**

	Noise Level (dBA)					
Noise Measurement Location	L_{max}	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}	L_{dn}*
ST-1 – 52 feet from the centerline of Claribel Road	81	68	58	47	65	68
ST-2 – 15 feet from the near lane center of 6th Street	77	66	55	46	63	69

* Ldn approximated based on concurrent long-term measurement data.

Noise measurement ST2 was west of the Specific Plan site near the intersection of Van Dusen Avenue and Claus Road. The primary noise source at this location was local traffic. Average noise levels were 63 dBA L_{eq} at a position 5 feet above the ground. Maximum noise levels resulting from trucks were 77



Source: Illingworth & Rodkin, 2012.

FIGURE 4.12-5

NOISE LEVELS AT LT4

dBA L_{max}. During the measurement 79 automobiles, five medium trucks, and one heavy truck passed. A relatively distant freight train passed during the measurement and generated audible noise levels.

D. Standards of Significance

The Plan would have a significant impact related to noise if it would result in:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

f. For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

E. Impacts Discussion

1. Plan Impacts

a. Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The City of Riverbank Noise and Land Use Compatibility Standards contained in the Noise Element of the General Plan are used to evaluate the compatibility of future land uses with the existing and future noise environments.

The Specific Plan would develop business park, retail, and industrial/office/research & development (R&D) uses. Based on traffic noise sources in the vicinity, noise levels within Specific Plan buildings would not exceed maximum allowable noise exposures in General Plan Table NOISE-1 (Table 4.12-5), as described below.

In accordance with the City of Riverbank's noise and land use compatibility guidelines, the maximum allowable interior noise exposure is 45 dBA L_{eq} for office buildings. Outdoor activity areas proposed at land uses within the Specific Plan area would not be expected to be sensitive to environmental noise; however, interior noise levels could exceed acceptable levels if noise control is not considered during building design.

Retail and office buildings are proposed as near as approximately 60 feet from the center of Claus Road, where future noise levels at the western exteriors of buildings are estimated to be up to 72 dBA L_{eq}. Standard office construction methods (assumes closed windows and forced-air mechanical ventilation systems) normally provides about 30 dBA of noise reduction when going from outside to inside. Interior hourly average noise levels would be about 42 dBA L_{eq} and would not exceed the maximum allowable noise exposure standard of 45 dBA L_{eq}. This is a *less-than-significant* impact.

The conceptual land use plan shows retail, office, and industrial uses throughout the project site. These land uses would be located adjacent to existing single-family uses to the south, west, and north. Noise sources at industrial sites could include truck movement, loading docks, outdoor mechanical equipment, use of public address systems, and operations (depending on the user). Noise sources such as loading docks would be expected to generate noise levels of about 50 to 60 dBA L_{eq} at 150 feet depending on the number of

trucks accessing the loading dock and frequency of other extraneous noise sources associated with receiving areas (e.g. forklifts, etc.). Noise sources at commercial uses could include loading docks, outdoor mechanical equipment (e.g. heating and cooling equipment, etc.), and parking lots.

Noise associated with the use of parking lots would include vehicular circulation, loud engines, car alarms, squealing tires, door slams, and human voices. The maximum sound (L_{max}) of a passing car at 15 mph typically ranges from 43 dBA to 53 dBA at 150 feet. The noise generated during an engine start is similar. Door slams create lower noise levels. Hourly average noise level resulting from all of these noise-generating activities in a busy parking lot could range from 35 dBA to 45 dBA L_{eq} at a distance of 150 feet from the parking area.

Heating, ventilation, and cooling equipment could generate noise levels in the range of 50 dBA to 70 dBA L_{eq} at 150 feet depending on the number, type, and size of the proposed equipment. Trash compactors typically generate maximum noise levels of 40 to 50 dBA at 150 feet, depending on the power rating and enclosure characteristics.

The nearest residential land uses are 110 feet west of the plan area, across Claus Road. Noise levels resulting from on-site activities may exceed City standards for stationary noise sources, as described in General Plan Tables NOISE-2 and NOISE-3 (Tables 4.12-6 and 4.12-7), at nearby residential receivers if the noise generated by such uses are not regulated or adequately mitigated. This represents a *significant* impact.

b. Expose people to or generate excessive groundborne vibration or groundborne noise levels.

The construction of the project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities would include demolition of existing structures, excavation, site preparation work, foundation work, and new building framing

and finishing. The proposed project is not expected to require pile driving, which can cause excessive vibration.

For structural damage, the California Department of Transportation uses a vibration limit of 0.5 inches/second, peak particle velocity (in/sec, PPV) for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec, PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec, PPV for ancient buildings or buildings that are documented to be structurally weakened.

Table 4.12-10 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project construction activities such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. Construction activities may extend over several construction seasons, but construction vibration would not be substantial for most of this time except during vibration generating activities (as discussed above). Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Vibration levels would be expected to be 0.2 in/sec PPV or less, below the 0.3 in/sec PPV significance threshold. Vibration generated by construction activities near the common property line would at times be perceptible, however, would not be expected to result in "architectural" damage to these buildings.

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant given the intermittent and short duration of the phases that have the highest potential of producing vibration (demolition and use of jackhammers and other high power tools). By use of administrative controls such as notifying

TABLE 4.12-10 **VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT**[a]

Equipment		PPV at 25 Feet (in/sec)	Approximate Lv at 25 Feet (VdB)
Pile Driver (Impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	typical	0.170	93
Clam Shovel Drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

[a] Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

adjacent commercial shops of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with the least potential to affect these uses, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception. This is a *less-than-significant* impact.

Vibration levels associated with the on-site railroad tracks would not exceed vibration criteria thresholds set by the Federal Transit Authority (FTA). Up to four non-passenger freight trains per day serve the RAAP via the Sierra Northern Railway (SERA) railroad branch. Typical train speeds are between 20 and 25 miles per hour at the Claus Road at Patterson Road crossing, and would likely be slower on-site. Travel speeds are anticipated to be relatively low and producing correspondingly low levels of vibration at nearby buildings proposed as part of the Specific Plan. Table 4.12-4 lists the FTA vibration impact criteria for institutional land uses (representative of land uses proposed as part of the Specific Plan) as 83 VdB for infrequent events. Assuming a maximum travel speed of 20 mph on site, groundborne vibration levels from freight trains would not be expected to exceed 83 VdB at distances greater than 20 feet from the tracks. Commercial and industrial land uses proposed as part of the Specific Plan that are located more than 20 feet from the on-site railroad tracks would not be impacted by groundborne vibration levels resulting from low-speed railroad train passbys. Therefore, this is a *less-than-significant* impact.

c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Traffic volumes in the project vicinity will increase with the development of the project area, and will generate an increase in traffic noise along the local roadway network. In some locations, there would be a substantial permanent increase in environmental noise at noise sensitive receptors. This is a *significant* impact.

The project vicinity contains a variety of land uses with varying sensitivities to noise. Residential land uses would be most affected by traffic noise level increases. Office and commercial uses are not typically affected by traffic noise increases along the local roadway network. Industrial land uses would not generally be affected by an increase in traffic noise. A noise impact would be identified at noise-sensitive land uses where the project would result in a noise level increase of 3 dBA L_{dn} or more in noise environments of 60 dBA L_{dn}

to 65 dBA L_{dn}; or, 1.5 dBA L_{dn} or more at outdoor activity areas of noise-sensitive uses where existing noise environments are greater than 65 dBA L_{dn}.

Traffic data provided by Fehr & Peers Transportation Consultants was reviewed to calculate potential project-related traffic noise level increases along roadways representative of those serving the Specific Plan site that would be affected by the Specific Plan. These data included turning movement counts at 15 intersections for existing conditions and projections for existing plus–project, cumulative without lane configurations, and cumulative with lane configurations conditions at build-out of the Specific Plan estimated to occur in 2030. Peak hour traffic volumes on these roadway segments were calculated based on the turning movement data and compared to existing conditions to calculate the anticipated noise level increase and the Specific Plan's relative contribution. Increases in traffic noise levels along the local streets are shown in Table 4.12-11. The traffic data indicates that the increase in traffic noise levels attributable to the Specific Plan would range from 0 to 2 dBA L_{dn}, with the largest noise increase expected along Claus Road between Townsend Avenue and Claribel Road. Existing noise environments at outdoor activity areas of residences along this segment of Claus Road are greater than 65 dBA L_{dn}, and would increase by more than 1.5 dBA as a result of transportation noise from the Specific Plan. This would represent a *significant impact* because the noise level increases would be greater than the City's significance thresholds set in Policy NOISE-2.1, stated above.

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive receptors. Where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least 5 dBA at noise-sensitive uses in the project vicinity for a period of more than one construction season, the impact would be considered significant.

TABLE 4.12-11 **TRAFFIC NOISE LEVEL INCREASES**

Roadway	Existing Noise Level (L_{dn}) at 50 feet from Center of Road	Existing Plus Project Noise Level (L_{dn}) at 50 feet from Center of Road	Noise Level Increase (L_{dn})
Claribel Road between Coffee Road and Oakdale Road	69	69	0
Claribel Road between Oakdale Road and Roselle Avenue	70	70	0
Claribel Road between Roselle Avenue and Claus Road	68	69	1
Claribel Road between Claus Road and Eleanor Road	67	67	0
Claus Road between Patterson Road and Townsend Avenue	67	67	0
Claus Road between Townsend Avenue and Claribel Road	67	69	2
Claus Road between Claribel Road and Terminal Avenue	68	69	1
Patterson Road between Terminal Avenue and Claus Road	66	66	0
Patterson Road between Claus Road and Eleanor Road	67	67	0
Townsend Avenue between Terminal Avenue and Claus Road	53	53	0

Construction activities generate considerable amounts of noise, especially when heavy equipment is used. The highest maximum noise levels generated by construction activities would typically range from about 90 to 98 dBA at a distance of 50 feet from the noise source. Typical hourly average construction-generated noise levels are about 79 dBA to 88 dBA measured at a distance of 50 feet from the center of a site during busy construction periods. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling

of distance between the source and receptor. Shielding provided by buildings or terrain result in lower construction noise levels at distant receptors.

Construction projects of this type are typically built out over more than one construction season, and some construction methods generate higher noise levels and noise that would be considered impulsive. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction durations last over extended periods of time. Limiting the hours when construction can occur to daytime hours is often a simple method to reduce the potential for noise impacts. In areas immediately adjacent to construction, controls such as constructing temporary noise barriers and utilizing "quiet" construction equipment can also reduce the potential for noise impacts.

It is likely that future development under the Specific Plan would occur in discrete phases over the 20-year build-out period of the Plan. However, the rate of development will be dependent on market conditions, which are unknown at this time. Future projects would be required to undergo environmental review to determine project-specific construction period noise impacts. It is reasonable to assume that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA, as a result, a *significant impact* would occur.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Retail, office, and industrial uses developed at the site would be intermittently exposed to noise levels from aircraft associated with the Peterson private airport located approximately 1.5 miles east of the Specific Plan area. Because of relative infrequent use of the airstrip and aircraft overflights, on-site noise levels would not substantially increased above those resulting from traffic along the local roadway network or on-site operations. The resulting noise

environment from aircraft would be considered compatible with the proposed land uses. This is a *less-than-significant* impact.

f. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

As discussed above in response to criteria e.) noise from aircraft at the RAAP site would be considered compatible with the proposed land uses, and would be considered a *less-than-significant* impact.

2. Cumulative Impacts

Traffic volume increases in the Specific Plan vicinity will result with the development of the plan area and other planned developments in the southeast portion of the City of Riverbank. In some locations, these increases would be substantial, and the project would contribute to the overall cumulative impact. This is a *significant* impact.

Traffic noise levels along Claribel Road and Claus Road will be substantially increased over existing conditions assuming cumulative traffic projections. Substantial cumulative noise level increases along affected roadway segments would be approximately 3 dBA L_{dn} above existing conditions. If the Specific Plan contributes at least 1 dBA L_{dn} to the significant cumulative noise level increase of 3 dBA L_{dn} of more, the noise increase would be "cumulatively considerable." Table 4.12-12 presents noise level information under different traffic scenarios at 50 feet from the center of area roadways.

Table 4.12-13 summarizes the substantial cumulative noise level increases attributable to the project and cumulative noise level increases anticipated in the project vicinity. Cumulative traffic noise impacts would occur at sensitive receptors along Claribel Road, between Roselle Avenue and Claus Road, and Claus Road, between Van Dusen Avenue and Claribel Road.

TABLE 4.12-12 **NOISE LEVELS FOR MULTIPLE SCENARIOS AT 50 FEET FROM ROADWAYS**

	Noise Level (L_{dn}) at 50 feet from Center of Road		
Affected Roadway Segment	Existing	Existing Plus Project	Cumulative
Claribel Road between Coffee Road and Oakdale Road	69	69	73
Claribel Road between Oakdale Road and Roselle Avenue	70	70	72
Claribel Road between Roselle Avenue and Claus Road	68	69	71
Claribel Road between Claus Road and Eleanor Road	67	67	71
Claus Road between Patterson Road and Townsend Avenue	67	67	69
Claus Road between Van Dusen Avenue and Claribel Road	67	68	70
Claus Road between Claribel Road and Terminal Avenue	68	69	70
Patterson Road between Terminal Avenue and Claus Road	66	66	67
Patterson Road between Claus Road and Eleanor Road	67	67	68
Townsend Avenue between Terminal Avenue and Claus Road	53	53	54

TABLE 4.12-13 **SUBSTANTIAL INCREASES TO TRAFFIC NOISE LEVELS IN THE PLAN AREA AND ITS VICINITY**

		Noise Level Increase (dBA, Ldn)	
Roadway	Segment	Project	Cumulative
Claribel Road	Coffee Road to Oakdale Road	>1	3
	Roselle Avenue to Claus Road	1	3
	Claus Road to Eleanor Road	>1	3
Claus Road	Van Dusen Ave. to Claribel Road	1	3

F. Impacts and Mitigation Measures

Impact NOISE-1: The nearest residential land uses are 110 feet west of the plan area, across Claus Road. Noise levels resulting from on-site activities may exceed City standards for stationary noise sources, as described in General Plan Tables NOISE-2 and NOISE-3 (Tables 4.12-6 and 4.12-7 in this EIR), at nearby residential receivers if the noise generated by such uses are not regulated or adequately mitigated.

Mitigation Measure NOISE-1: In order to reduce noise generated by activities occurring within the RAAP site, the following mitigation measures shall be implemented:

- Project level acoustical analyses shall be constructed for noise-generating land uses proposed as part of the Specific Plan. Exterior noise levels at residential land uses interfacing active parks, commercial land uses, or industrial land uses shall be maintained in accordance with the standards presented in the General Plan and Municipal Code.

- Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).
- Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers.
- Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).

Significance After Mitigation: *Less than Significant.* Traffic data provided by Fehr & Peers Transportation Consultants was reviewed to calculate potential project-related traffic noise level increases along roadways representative of those serving the Specific Plan site that would be affected by the Specific Plan. These data included turning movement counts at 15 intersections for existing conditions and projections for existing plus–project, cumulative without lane configurations, and cumulative with lane configurations conditions at build-out of the Specific Plan estimated to occur in 2030. Peak hour traffic volumes on these roadway segments were calculated based on the turning movement data and compared to existing conditions to calculate the anticipated noise level increase and the Specific Plan's relative contribution. Increases in traffic noise levels along the local streets are shown in Table 4.12-11. The traffic data indicates that the increase in traffic noise levels attributable to the Specific Plan would range from 0 to 2 dBA L_{dn}, with the largest noise increase expected along Claus Road between Townsend Avenue and Claribel Road. Existing noise environments at outdoor activity areas of residences along this segment of Claus Road are greater than 65 dBA L_{dn}, and would increase by more than 1.5 dBA as a result of transportation noise from the Specific Plan. This would represent a significant impact because the noise level increases would be greater than the City's significance thresholds set in Policy NOISE-2.1, stated above.

Impact NOISE-2: Existing noise environments at outdoor activity areas of residences along Claus Road are greater than 65 dBA L_{dn}, and would increase

by more than 1.5 dBA as a result of transportation noise following implementation of the Specific Plan.

Mitigation Measure NOISE-2: Noise reduction methods shall be implemented to reduce generated by activities resulting from the Specific Plan. These measures shall include, but are not limited to the following:

- Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors.
- New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review.
- Sound insulation treatments to affected buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces.
- Installing traffic calming measures to slow traffic along Claus Road could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.

Significance After Mitigation: Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along residential-type streets by 2 to 3 dBA.[1] A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions. To be a permanent mitigation, subsequent repaving would also have to be "quieter" pavements.

Alternatively, new or larger noise barriers could be constructed to provide acoustical shielding at affected outdoor use areas, and sound insula-

[1] Douglas D. Carlson, Han Zhu Ph.D., Can Xiao. Analysis of Traffic Noise Before and After Paving With Asphalt-Rubber, http://www.asphaltrubber.org/ari/Noise/Analysis_of_Traffic_Noise_Before_and_after_Paving_with_Asphalt_Rubber_on_US60.pdf.

tion could be installed to control noise levels in interior spaces to acceptable levels. Typically, increasing the height of an existing barrier results in about 1 dBA of attenuation per 1 foot of additional barrier height. The design of such noise barriers would require additional analysis. Treatments to the home may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise to by closing the windows. The specific treatments for each affected residential unit would be identified on a case-by-case basis.

Finally, traffic calming could be implemented to reduce the noise of vehicles. Each 5 mph reduction in average speed provides approximately 1 dBA of noise reduction on an average basis (L_{eq}/L_{dn}). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Each of these mitigation measures involves other non-acoustical considerations. Other engineering issues may dictate continued use of dense grade asphalt. Noise barriers and sound insulation treatments must be done on private property necessitating agreements with each property owner. Therefore, it may not be reasonable or feasible to reduce project-generated traffic noise at all affected receivers. The impact would be considered *significant and unavoidable.*

Impact NOISE-3: While the duration and phasing of construction activities for the Specific Plan is unknown at this time, it is conceivable that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA for durations exceeding one construction season.

Mitigation Measure NOISE-3: To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the plan area:

- Limit construction to the hours of 7:00 a.m. to 6:30 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays.
- Equip all internal combustion engine-driven equipment with mufflers which are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines should be strictly prohibited.
- Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.
- Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.
- The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Significance After Mitigation: With implementation of these measures, the impact would be *less-than-significant.*

Impact NOISE-4: Traffic volume increases in the vicinity of the Specific Plan vicinity will result with the development of the plan area and other planned developments in the southeast portion of the City of Riverbank.

Mitigation Measure NOISE-4: Implement Mitigation Measure NOISE-2.

Significance After Mitigation: Similar to Impact NOISE-2, it may not be reasonable or feasible to reduce cumulative traffic noise levels at all affected receivers. The increase in development density would increase noise levels noticeably at receivers. Measures available to reduce the cumulative noise level increases would not likely be reasonable or feasible in all areas, therefore, the impact would be considered *significant and unavoidable.*

4.13 POPULATION AND HOUSING

This chapter discusses population, housing, and employment trends and conditions in Riverbank and Stanislaus County, and evaluates the potential impacts to population and housing associated with implementation of the draft RAAP Specific Plan. The following evaluation assesses the potential for growth inducement as well as for the displacement of current residents and existing housing units.

A. Regulatory Framework

This section summarizes key State and local regulations, policies and programs pertaining to population and housing in the RAAP Plan Area.

1. Regional Planning

The Stanislaus Council of Governments (StanCOG) is the federally recognized Metropolitan Planning Organization for Stanislaus County and the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford. The StanCOG Policy Board is comprised of county supervisors, mayors, and city council members who work together to enhance communication, cooperation, and comprehensive planning in dealing with regional issues. StanCOG is charged with overseeing the Regional Housing Needs Allocation (RHNA) process for member jurisdictions and with developing a RHNA Plan to allocate the fair share housing need for each jurisdiction within Stanislaus County in accordance with the requirements of Section 65584 of the California Government Code. StanCOG assigns jurisdictions an allocation of housing units to be built in that area during a specific planning period, usually five to seven years. The allocation is specific to the number of housing units to be built for very low-, low income, moderate, and above moderate income levels.

2. Local Planning

Under California Government Code Section 65580, local governments are responsible for facilitating improvements and development of housing to meet the housing needs of all economic segments of the community, while considering other fiscal, environmental, and community goals set forth in the

General Plan. The Housing Element, one of seven mandated elements of the General Plan, is the vehicle through which local governments carry out this responsibility. The Housing Element summarizes information on population and housing required for the evaluation of current and future housing needs, and the Element also contains policies and programs designed to address the identified needs.

The City of Riverbank 2009-2014 Housing Element represents a five-year program to conserve, improve, and develop housing in the community. Goals, policies, and programs from the Riverbank Housing Element relevant to population and housing are summarized below in Table 4.13-1.

B. Existing Conditions

This section describes population, housing, and employment trends and conditions in Riverbank and Stanislaus County.

1. Population Trends and Growth Rate

According to US Census data, the population of Riverbank was 22678 in 2010.[1] Throughout the 1990s Riverbank was one of the fastest growing communities in California, experiencing an 84 percent rise in the number of residents and an average annual population growth rate of 7.6 percent. Neighboring communities also experienced population growth in the same timeframe, although the rate of growth was not as dramatic as seen in Riverbank. Population grew by 14.6 percent in Modesto, 29.4 percent in Oakdale, 34.3 percent in Escalon, and 20.6 percent for Stanislaus County as a whole.[2] It is estimated that while population growth throughout the County slowed between 2000 and 2005, growth in Riverbank continued at approximately 4.8 percent, twice the rate seen in Stanislaus County as a whole.

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[1] US Census, City of Riverbank.

[2] City of Riverbank, 2005. *General Plan Background Report: Economic Development,* page 2.

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING**

Goal/Policy/ Program Number	Goal, Policy, or Program Content
Goal 1	**Identify adequate sites to provide for a sufficient number of dwelling units to meet the City's regional housing needs.**
Policy 1.1	Ensure land use and zoning procedures accommodating to affordable housing.
	Rezone sites listed in Table V-2 (65.2 acres) and adopt a general plan amendment (if necessary) to complete annexation and zoning of at least 15 acres of potential sites identified in Table V-3 to higher density residential (R-3 or equivalent zoning of at least 20 dwelling units per acre). The first areas to be targeted for rezoning by December 2011 will be Table V-2 sites within existing City limits. Owner and rental multifamily uses will be permitted by-right in these areas, without a conditional use permit, planned unit development or other discretionary review or approval. In addition, a minimum of 20 units per acre will be required. By December 2012, the City will complete annexation and zoning (in consultation with property owners) of at least 15 acres of sites shown in Figure Table V-3.
Program 1.1a	The Stanislaus County Local Agency Formation Commission (LAFCo) has indicated to the City that it would look favorably on annexation requests for land adjacent to current City limits within Riverbank's Sphere of Influence (SOI). The City will: 1) identify areas with few environmental constraints that can be provided with public facilities and services meeting City standards; 2) meet with property owners to seek their agreement to initiate annexation; and 3) initiate specific planning and/or rezoning as part of the annexation process to expedite residential development opportunities. The City's objective will be to increase the availability of adequate sites—properties without significant environmental or public facility constraints to ensure the properties can accommodate development by June 2013. The City will continue to provide a process whereby multi-family housing can be approved without a conditional use permit process (by right, as currently allowed in the R-3 zone). To ensure that the City meets it obligation to identify additional sites, the City will commit to the actions and timeframes listed below. The City believes these timeframes are workable based on the history of annexations in Riverbank over the past several

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING** (CONTINUED)

Goal/Policy/ Program Number	Goal, Policy, or Program Content
	years. The City will use the following criteria to identify the most appropriate sites for rezoning to permit 20 or more units per acre: ♦ Identify sites for residential development, suitable for high-density residential development on or near major roads and transportation corridors; ♦ Identify sites that are least two acres or greater in size for efficient use as multi-family housing; ♦ Provide a financing plan and phasing schedule for the provision of public facilities and services (including water, sewer, and storm drainage) that ensure the sites can be developed between 2011 and 2014; and ♦ Concurrent with the annexations, adopt development standards similar to the City's R-3 zone for high-density housing that will permit multi-family housing by right, without a conditional use permit (see Table D-1), and require that properties designated for high-density residential use are developed, on average, at 70 percent or greater of the maximum permitted density of 20 or more units per acre.
Policy 1.2	Maintain an inventory of vacant and underutilized residential lands.
Program 1.2a	Track changes in land availability and accomplishments in multi-family development in order to determine if further rezoning is necessary to better facilitate high-density developments.
Program 1.2b	Update Geographical Information Systems (GIS) as changes to the land inventory occur. Provide this information to those interested in infill projects through updated layers viewable from the internet.
Goal 2	**Encourage and assist in the development of adequate housing to meet the needs of extremely low-, low-, and very low-income households.**
Policy 2.1	Implement a proactive approach to encourage and gain support for multi-family developments.
Program 2.1a	Seek assistance from non-profit developers, including Self-Help Enterprises and Habitat for Humanity to develop homes for lower-income families. The City will meet with non-profit developers to discuss available sites for affordable housing projects, potential funding sources, and actions the City can take to assist

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING** (CONTINUED)

Goal/Policy/ Program Number	Goal, Policy, or Program Content
	housing providers in obtaining funding.
Program 2.1b	Continue to assist developers of extremely low-, low- and very-low income housing in the grant preparation process to help fund their developments. Funding will be prioritized for the development of housing affordable to extremely low-income households. The City assists developers by expediting review and approval of development applications to meet funding deadlines and providing information needed to support funding requests.
Program 2.1c	Encourage developers to include second dwelling units in new subdivisions as well as a variety of higher density options. The City encourages developers to include second units by permitting such units without requiring additional lot area and allowing up to 50 percent lot coverage. The City permits such units by right in single-family subdivisions according to the requirements of State law.
Program 2.1d	Continue to distribute information on second units at the permit counter and post information on the City's website.
Program 2.1e	Adopt a density bonus ordinance in compliance with statutory amendments (Chapter 1928, Statutes 2004) to State density bonus law (Government Code Section 65915).
Program 2.1f	Assist in the development of housing for farmworkers. Actions will include assistance with site identification and support of applications for funding. The City will identify a partner and development opportunity by June 1010 and apply for grant funding through HCD.
Program 2.1g	The City will update the uses permitted in the R-3 zone (Section 153.061 (A)) to include emergency shelters. Emergency shelters will only be subject to those development and management standards that apply to other residential development within the same zone.
Policy 2.2	Adopt an Inclusionary Zoning Ordinance
Program 2.2a	An Inclusionary Zoning Ordinance will propose to have the City of Riverbank establish a regulatory and incentive framework which provides opportunities for the development of a supply and mix of new housing to meet the future housing needs of all residents. Through this framework it is expected that new residential development will provide housing opportunities to households of all incomes and achieve a diverse and balanced

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING** (CONTINUED)

Goal/Policy/ Program Number	Goal, Policy, or Program Content
	community with housing available for households of all income levels.
	Inclusionary unit regulations will apply to projects that propose (1) the creation of five or more dwelling units through new construction, or (2) the creation of ten or more dwelling units through adaptive reuse or conversion of a nonresidential use to residential use. The Inclusionary Zoning Ordinance will govern the percentage of inclusionary units, general requirements for inclusionary units, calculation of rents and selling prices, marketing of inclusionary units, requirements for continued affordability, and density bonuses. Projects that have entered into a development agreement with the City of Riverbank may be exempted from the provisions of this ordinance only if alternative methods of ensuring the construction of affordable dwelling units are included as part of said agreement.
Goal 3	**Reduce or remove government constraints.**
Policy 3.1	Promote efficient and creative alternatives to help reduce government constraints.
Program 3.1a	Continue to promote the use of Planned Development zones for developers who wish to deviate from setback, parking, or other standards which may limit their ability to develop at a desired density.
Program 3.1b	The City will waive fees for General Plan amendments intended solely to increase residential designations from low-to-medium density to medium-to-high density residential. The City will apply the fee waiver at the time of submittal of a complete application. The City will also defer fees for developments with units affordable to lower-income households until the time of first inspection or as established in a development agreement between the City and the project applicant. The City will promote its fee waiver program through distribution of a brochure at the permit counter, posting of information on the City's website, and distribution of information to the local building industry association.
Program 3.1c	Continue to utilize computer software to help fast-track building permits, saving both developer and staff time.
Program 3.1d	Amend the Zoning Ordinance to facilitate the development of housing for special needs groups. Amendments will address the following:

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING** (CONTINUED)

Goal/Policy/ Program Number	Goal, Policy, or Program Content
	♦ Parking requirements: The City will approve reduced parking requirements for developments containing senior, handicapped, single-adult, and/or small-family housing for which two parking spaces per unit are not needed to meet resident and guest parking demands.
Goal 4	**Conserve and improve the condition of existing affordable housing stock.**
Policy 4.1	Increase rehabilitation efforts.
Program 4.1a	Continue to actively seek State and federal funding for the rehabilitation of homes. The City will consider annual applications for State CDBG, HOME, and Multi-family Housing Program funds depending on the need for additional funds and the City's ability to expend funds in a timely manner.
Program 4.1b	Maintain database of housing conditions and rehabilitation projects to track accomplishments and assist in future goals.
Policy 4.2	Preserve current multi-family sites.
Program 4.2a	Discourage land division of sites currently zoned high-density residential.
Program 4.2b	Monitor any units which may be deemed at-risk for conversion into market-rate housing. Ensure that any loss to the housing stock for lower income households is properly mitigated.
Goal 5	**Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability.**
Policy 5.1	Make programs and information available to all persons.
Program 5.1a	The City will continue to promote equal housing opportunity for all persons regardless of race, religion, sex, marital status, ancestry, nation origin, or color by supporting efforts of community groups that provide counseling, investigatory, legal, or referral services to victims of discrimination. Specifically, the City will: ♦ Disseminate information in a variety of ways (including brochures, mailings, websites, newspaper ads, etc. in both English and Spanish) regarding rehabilitation and first-time homebuyer programs. ♦ Maintain information on State and federal fair housing laws at

TABLE 4.13-1 **RIVERBANK GENERAL PLAN GOALS, POLICIES, AND PROGRAMS RELATED TO POPULATION AND HOUSING** (CONTINUED)

Goal/Policy/ Program Number	Goal, Policy, or Program Content
	the Community Development Department and other public places for public distribution (such as the Riverbank branch of the Stanislaus County Public Library, the Riverbank Community Center, and City Hall); ♦ Train City staff at the public counter to refer victims of housing discrimination to the appropriate agency (local legal services organization, the Stanislaus County District Attorney's Office, the State Fair Employment and Housing Commission, or the US Department of Housing and Urban Development); ♦ Seek the cooperation of the local homebuilders association, Realtor association and lenders in disseminating fair housing information; and ♦ Identify an annual community event such as a fair housing day or as part of another community event at which fair housing information can be distributed.
Program 5.1b	The City will update the definition of "family" and "single-family residence" to comply with all federal and State fair housing laws. The definition should not distinguish between related and unrelated persons and should not impose limitations on the number of persons that may constitute a family.

Source: City of Riverbank, 2005.

Riverbank has traditionally served as a bedroom community to Modesto; however, with the construction of new subdivisions between 1990 and 2000, Riverbank became home to an increasing number of white collar professionals who commute to jobs in the San Francisco Bay Area and other parts of the state.[3] Over the course of the 1990s there was an 8 percent rise in the number of Riverbank residents with college degrees, a notable rise in educational attainment which was not matched in the neighboring communities of Escalon, Modesto, and Oakdale. In general, Stanislaus County has a high out-

[3] City of Riverbank, 2005. *General Plan Background Report: Economic Development,* page 5.

commute rate; however, Riverbank's out-commute rate is more pronounced than other communities in the county.

2. Employment Trends and Growth Rate

Residents who live and work in Riverbank are most likely to work in manufacturing, service, and retail occupations. The three largest employers in Riverbank are the Riverbank Unified School District with 340 employees, Silgan Containers with 219 employees, and Target Corporation with 200 employees. The closing of the MCI Call Center and Gangi Brothers has contributed to a high rate of unemployment in recent years. In 2008, the unemployment rate in Riverbank averaged 18.1 percent for the year, well above the 12 percent rate experience for Stanislaus County and 8.4 percent for the State as a whole.

The single most significant employment trend in Riverbank and Stanislaus County over the last decade has been the shift from manufacturing and agricultural occupations into retail and service jobs. Between 1990 and 2000, the percentage of Riverbank residents employed in retail jobs grew by 4 percent to 48 percent, while the proportion of residents working in manufacturing fell from 22 percent to 18 percent. According to the California Retail Survey, Riverbank is currently the third fastest retail growth area in the State. The newly completed Riverbank Crossroads Regional Center, anchored by Target, Koh's, Home Depot, and SaveMart, has positioned Riverbank as a competitive player in the regional retail market. Numerous small businesses have relocated tot the mall to capitalize on traffic brought in by the anchor clients.

3. Existing Housing Stock

According to the 2010 US Census, there were a total of 6,579 housing units in Riverbank. The overwhelming majority of housing units in Riverbank are single-family homes.[4] Approximately 75 percent of the occupied homes in the city are owner-occupied, with the remainder renter-occupied. Nearly 58 percent of the housing units in Riverbank were built in the last 20 years;

[4] City of Riverbank, 2009. *2009-2014 Riverbank Housing Element,* page iii-1.

however, a significant portion of the housing stock is older, as roughly 12 percent of units in the city were built before 1960. A housing conditions survey conducted in 2003 found approximately 55 percent of the housing units in the city to be in sound condition, 12 percent to be in need of minor repairs, 24 percent to be in need of moderate repairs, 4.6 percent in need of substantial repairs, and 1.2 percent to be dilapidated.

The population boom in Riverbank since 1990 has spurred housing construction. The number of housing units in the city grew at a faster pace than for Stanislaus County and for the State between 2000 and 2005. During that period, Riverbank housing growth was 4.5 percent, while the growth rate was 2.2 percent for the County and 1.2 percent for the State.[5] Between 2000 and 2008, there was a 37 percent increase in the number of detached single-family units in the city, whereas during the same period the increase in multi-family units was only 1 percent.

In 2009, the StanCOG Draft RHNA estimated that Riverbank's fair share of the total additional housing units required in the county by 2014 was 3 percent, or 894 units.[6]

4. Jobs-Housing Balance

A relatively even ratio of jobs to housing in a community allows people to get to work without having to commute long distances. By reducing commute times, and by extension vehicle miles travelled, a healthy balance of jobs to housing can also bring environmental and social benefits such as improved air quality and increased leisure time.

The jobs-housing balance in a community is an indication of how adequately the local housing supply houses workers. Communities with a job to housing ratio higher than 1.5 are considered "jobs rich," while communities with a

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[5] Riverbank Redevelopment Authority, 2009. *Final Environmental Impact Report for the Riverbank Reinvestment Project, Amendment No. 1,* page 37.

[6] Riverbank Redevelopment Authority, 2009. *Final Environmental Impact Report for the Riverbank Reinvestment Project, Amendment No. 1,* page 37.

ratio lower than 1.5 are considered "housing rich." Between 1994 and 2002, the job-to-housing ratio in Riverbank improved from 0.45 to 0.6. Nevertheless, the city remains housing-rich and jobs-poor, and as a result, a very large portion of residents that commute to jobs outside of the community.

5. Projections

Projections for Riverbank population in 2030 are widely divergent, depending on the methodology used. US Census projections, based on the assumption of a constant annual population growth rate of 3.7 percent, the city's 2030 population would be 47,113. California Department of Finance projections assume an average annual growth in population of 4.1 percent and project a 2030 population of 52,664 for Riverbank. By contrast, StanCOG projections assume an 84 percent growth in the number of household in Riverbank between 2000 and 2030, which would result in 28,352 residents of the city in 2030.[7]

C. Standards of Significance

The draft RAAP Specific Plan would have a significant population or housing impact if it would:

a. Induce substantial unexpected population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

b. Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

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[7] Riverbank Redevelopment Authority, 2009. *Final Environmental Impact Report for the Riverbank Reinvestment Project, Amendment No. 1,* page 35.

D. Impact Discussion

1. Project Impacts

a. Induce substantial unexpected population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

For the purposes of this EIR, the Plan would be considered to result in a substantial and unplanned level of growth if estimated buildout under the Plan would exceed 2005-2025 Riverbank General Plan growth projections. The Plan does not propose the construction of housing units, and therefore implementation would not directly induce population growth. Redevelopment of the RAAP site, however, would cause indirect population growth through the creation of jobs both during construction and operational phases of the Plan.

Job generation projections done for the Riverbank Army Ammunitions Plan Base Reuse Plan indicated that infrastructure upgrades and facilities construction associated with base redevelopment could generate as much as 158 person-years of construction employment on the site over a period of approximately 15 years. In general, these jobs would be filled with workers from the local labor pool in Riverbank and the surrounding communities. As such, implementation of the Plan would not result in a substantial and unplanned level of growth.

Buildout of the Plan would entail the reuse of a variety of specialized facilities (such as the rail line and the propane storage facilities) as well as existing manufacturing and warehouse facilities in the Plan Area. Additionally, as shown on Table 3-1, the development of approximately 120,000 square feet of net new commercial/retail space, 735,000 square feet of net new industrial space, and 115,000 square feet of office research and development (R&D) space are forecast under the Plan. Overall, it is anticipated that buildout of the Plan would result in the creation of between 827 and 1,654 new jobs over the course of 15 years.

The increase in industrial and commercial/office square footage anticipated with buildout of the Plan is generally consistent with growth projections assumed in the Riverbank General Plan for the same time horizon. The General Plan projects the construction of approximately 1,999,540 square feet of space in industrial business parks, which would be concentrated largely along the railroad lines and in the southeastern portion of the city, including in the Plan Area, as shown in Figure 4.11-1 in the Land Use chapter of this EIR. The General Plan also projects construction of roughly 678,980 square feet of net new commercial/retail space on the northern portion of the Plan Area and along Claribel Road on either side of Oakdale Road, as shown in Figure 4.11-1. Additionally, growth under the proposed Plan would come incrementally over a period of 15 years and would be dependent on market conditions. As such, the proposed Plan would not result in a substantial and unplanned level of growth and associated impacts would be *less than significant.*

b. Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.

The RAAP site does not contain any housing units and the Plan does not propose the demolition or redevelopment of any housing units. As such, implementation of the Plan would not result in the displacement of housing units or require the construction of replacement housing elsewhere. Consequently, there would be *no impact* with respect to displacement of housing units.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As described above, the RAAP site does not contain any housing units. As such, there are no residents of the site who could be displaced with implementation of the Plan, and therefore the construction of replacement housing elsewhere would not be required. Consequently, there would be *no impact* with respect to population displacement.

2. Cumulative Impacts

This section analyzes potential impacts to population and housing that could occur from a combination of the Plan with other reasonably foreseeable projects in the surrounding area. The geographic scope of this analysis is taken as Stanislaus County. A cumulative impact would be considered significant if, taken together with past, present and reasonably foreseeable projects in Stanislaus County, it would result in substantial unplanned growth or the displacement of either people or housing units.

While the Plan does not involve the construction of housing and would therefore not result in direct population growth, the construction of new and redeveloped industrial, commercial, and office space in the Plan Area would result in new jobs, potentially leading to an indirect increase in population. However, the type of job generated under the proposed Plan would cater to the existing labor pool of unemployed works, as discussed above in Section B.2, Employment Trends and Growth Rate. Additionally, StanCOG growth projections forecast strong population growth for the County through 2030, with approximately 6,000 new residents forecast for Riverbank by 2030. Therefore, the incremental addition of between 827 and 1,654 new jobs in the Plan Area from 2010 to 2030, many of which would cater to the skills of current residents of the surrounding area is consistent with regional growth projections and would not represent a substantial increase in population. As such, cumulative impacts related to induced growth, unplanned growth in Stanislaus County and cumulative impacts would be *less than significant.*

Projections for Riverbank population in 2030 are widely divergent, depending on the methodology used. US Census projections, based on the assumption of a constant annual population growth rate of 3.7 percent, the city's 2030 population would be 47,113. California Department of Finance projections assume an average annual growth in population of 4.1 percent and project a 2030 population of 52,664 for Riverbank. By contrast, StanCOG projections assume an 84 percent growth in the number of household in Riverbank be-

tween 2000 and 2030, which would result in 28,352 residents of the city in 2030.[8]

Additionally, the Plan Area does not currently contain any housing and the Plan does not propose the demolition or redevelopment of any housing units. Therefore, buildout of the Plan would not result in an associated cumulative impact. Overall, buildout of the Plan would result in a *less-than-significant* cumulative impact.

E. Impacts and Mitigation Measures

Since there are no significant impacts related to cultural resources as a result of the Plan, no mitigation measures are required.

[8] Riverbank Redevelopment Authority, 2009. *Final Environmental Impact Report for the Riverbank Reinvestment Project, Amendment No. 1*, page 35.

4.14 PUBLIC SERVICES

This chapter describes the existing public service conditions in Riverbank, including the Plan Area, and evaluates the potential impacts of the Plan on public services. Law enforcement, fire protection, and emergency medical response, and schools are each addressed in a separate section of this chapter. In each section, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan-specific and cumulative impacts.

A. Law Enforcement

This section describes the regulatory framework, existing conditions, and potential environmental impacts from buildout of the Plan with regard to local law enforcement. The section considers the provision of law enforcement service to the Plan Area.

1. Regulatory Framework

There are no federal or State regulations related to law enforcement services in Riverbank; however, the City of Riverbank addresses law enforcement services in the General Plan. Applicable goals and policies from the General Plan are listed below in Table 4.14-1.

2. Existing Conditions

The City of Riverbank receives law enforcement services through the Riverbank Police Services (RPS), which is provided under contract to the Stanislaus County Sheriff (SCS), headquartered in Modesto.

Other cities served under contract with the SCS include Patterson, Waterford, and Hughson.[1] Personnel assigned to Riverbank Police Services perform Patrol, General Investigations, Traffic Enforcement, Crime Prevention and Business Office functions. A wide array of ancillary services, such as the SWAT team, Dive team, Bomb team, and other administrative functions

[1] City of Riverbank, 2009. *Draft Environmental Impact Report for the 2005-2025 General Plan Update,* page 4.14-5.

TABLE 4.14-1 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO LAW ENFORCEMENT SERVICES**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.1	The City will coordinate the planning and construction of capital improvements with the timing of urban development within the Planning Area.
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.4	The City shall give priority to serving areas within the existing City limits as of the adoption of this General Plan based on current infrastructure and service capacity. New growth proposed outside existing City limits is responsible for providing, or paying a proportionate share of the cost of, public facilities and infrastructure adequate to serve the needs of such development according to the General Plan, a specific plan (if prepared for such development), and/or any infrastructure Master Plan that covers such development through the use of a City-approved development agreement. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities

TABLE 4.14-1 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO LAW ENFORCEMENT SERVICES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
	that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.5	The City will upgrade facilities and services that experience deterioration or obsolescence in existing developed areas of the City, as funding permits, to maintain levels of public service established by the City.
Policy PUBLIC-1.6	The City will require that the methods, materials, and design of infrastructure and utilities achieve the City's environmental, public health and safety, and community character goals and policies, in addition to the City's level of service standards for public services, facilities, and infrastructure.
Goal PUBLIC-8	**Police enforcement services, staffing and deployment adequate to serve the needs of existing and planned development.**
Policy PUBLIC-8.1	New developments shall fund and/or construct adequate law enforcement facilities to serve new growth areas, as required, in coordination with law enforcement service providers.
Policy PUBLIC-8.2	The City's goal is to provide 1.25 sworn officers per 1,000 residents. The City will plan and budget and coordinate with service providers with this service standard as a goal
Policy PUBLIC-8.3	The City will coordinate with law enforcement service providers to ensure a four-minute average response time for emergency calls within the City.
Policy PUBLIC-8.4	The City will require design of structures, streetscapes, pathways, project sites, and other elements of the urban environment to allow for surveillance of publicly accessible areas.
Policy PUBLIC-8.5	The City will coordinate with applicable law enforcement service providers to ensure adequate funding, staffing, training, and direction to provide City residents with responsive and effective law enforcement services of all types, including investigative, patrol, and other non-emergency services.

Source: City of Riverbank General Plan 2005-2025.

are also provided by the Sheriff's Operations Center, located on Hackett Road, in the City of Modesto.

Riverbank Police Services is comprised of 20 Sworn Deputies, including one chief, two sergeants, ten patrol officers, four investigators, and three traffic officers, who provide law enforcement services to the 22,201 plus residents of the city. This averages 0.90 deputies per thousand residents, which is below the goal of 1.25 deputies per thousand established in the General Plan. The time line for achieving this goal is 5 years, but RPS staff indicated that given the current economic climate, this time line should be extended. The Sworn Deputies are assisted by several reserve deputies, six civilian employees, and numerous civilian volunteers. Currently RPS does not have any plans for expansion or relocation of its facilities.[2]

RPS prioritizes calls for police services as follows: Priority 1 calls involve life-threatening situations; Priority 2 calls are not life-threatening but necessitate immediate response; and Priority 3 includes all other calls. General Plan Policy PUBLIC-8.3 calls for a 4-minute average response time for emergency calls within the City. In 2011, RPS received a total of 17,600 calls for service, and response time for Priority 1 calls was 2:43 minutes on average, which meet the City's 4-minute goal.[3]

3. Standards of Significance

The Plan would have a significant impact on law enforcement services if it would result in the provision of, or need for, new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

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[2] Chief Bill Pooley, Police Service Commander, City of Riverbank Police Department. Email correspondence with The Planning Center | DC&E, June 4, 2012.

[3] Chief Bill Pooley, Police Service Commander, City of Riverbank Police Department. Email correspondence with The Planning Center | DC&E, June 4, 2012.

4. Impact Discussion

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities, or result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

The Plan would have a significant environmental impact if buildout would exceed the ability of police responders to adequately serve the Plan Area, thereby requiring construction of new facilities or modification of existing facilities.

RPS is currently well above the response time goal established in the General Plan. General Plan Policies PUBLIC-8.1, 8.4, and 8.5 will ensure adequate police services, staffing, and funding to serve the needs of planned development. Although RPS is currently under the General Plan goal of providing 1.25 sworn officers per 1,000 residents, buildout of the Plan would not result in a substantial increase in population either directly or indirectly, as explained in Chapter 4.13 of this EIR, and therefore it would not substantially affect the target officer to resident ratio established in the General Plan. Moreover, the increase in population and the growth of businesses in the Plan Area would occur incrementally over approximately 20 years. At this time, RPS has determined that buildout of the Specific Plan would not exceed the ability of police responders to adequately serve the Plan Area, thereby would not need additional equipment or staff or require construction of new facilities or modification of existing facilities.[4] Consequently, the impact on law enforcement services would be *less than significant.*

5. Cumulative Impacts

This section analyzes potential cumulative impacts to RPS that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank sphere of

influence (SOI), as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in substantial adverse physical impacts associated with the provision of new or physically altered RPS facilities, or result in the need for new or physically altered RPS facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

By itself, buildout of the Plan would not result in substantial population growth in Riverbank or the surrounding area, and therefore would not substantially increase the service population in the RPS service area or necessitate the construction of new or expanded RPS facilities. Therefore, buildout of the Plan would not contribute to a cumulative impact to police services. Additionally, as noted above, the General Plan includes Policies PUBLIC-8.1 through PUBLIC-8.5, which seek to ensure that police service is adequate to serve existing and future growth in Riverbank. Policies PUBLIC-1.1 through PUBLIC-1.7 seek to ensure that funding will be available to support the construction and expansion of police facilities as required to support future growth in the Riverbank SOI.

Overall, cumulative impacts to police services from buildout of the Plan would be *less than significant.*

6. Impacts and Mitigation Measures

Since there are no significant impacts related to police services as a result of the Plan, no mitigation measures are required.

[4] Chief Bill Pooley, Police Service Commander, City of Riverbank Police Department. Email correspondence with The Planning Center | DC&E, June 4, 2012.

B. Fire Protection and Emergency Rescue Service

This section describes the regulatory framework, existing conditions, and potential environmental impacts from buildout of the Plan with regard to local emergency fire and rescue protection services. The section considers the provision of fire protection and emergency rescue service to the Plan Area.

1. Regulatory Framework

a. Riverbank General Plan

There are no federal or State regulations related to fire protection and emergency rescue services in Riverbank; however, the City of Riverbank addresses these services in the General Plan. Applicable goals and policies from the General Plan are listed below in Table 4.14-2.

2. Existing Conditions

Stanislaus Consolidated Fire Protection District (SCFPD) provides emergency fire and rescue protection service to the City of Riverbank. One of SCFPD's six stations, Station 36, is centrally located in downtown Riverbank at 3318 Topeka Street and is staffed 24-hours a day. SCFPD's administrative headquarters is also located in Riverbank at 3324 Topeka Street, next to Station 36.

Full-time staff at Station 36 include: a Captain, an Engineer, and a Firefighter on-duty daily. Intern firefighters, who number between 5 and 10 at any given time throughout the SCFPD service area, also serve at Station 36, and a typical fire response in Riverbank may include 1 or 2 intern(s). Current equipment at Station 36 includes two Type-1 engines with 24-foot ladders (one is a reserve unit), one water tender (a truck that hauls water to unincorporated areas that are not served by fire hydrants), one Type-3 brush engine (a small engine better suited for off-road use, primarily used for vegetation fires), a small rescue boat, and tow vehicle.[5]

[5] Mayotte, Stephen. Fire Chief, Stanislaus Consolidated Fire Protection District. Email communication with The Planning Center | DC&E, May 7, 2012.

TABLE 4.14-2 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO FIRE PROTECTION AND EMERGENCY RESCUE SERVICES**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.1	The City will coordinate the planning and construction of capital improvements with the timing of urban development within the Planning Area.
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.4	The City shall give priority to serving areas within the existing City limits as of the adoption of this General Plan based on current infrastructure and service capacity. New growth proposed outside existing City limits is responsible for providing, or paying a proportionate share of the cost of, public facilities and infrastructure adequate to serve the needs of such development according to the General Plan, a specific plan (if prepared for such development), and/or any infrastructure Master Plan that covers such development through the use of a City-approved development agreement. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities

TABLE 4.14-2 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO FIRE PROTECTION AND EMERGENCY RESCUE SERVICES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
	that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.5	The City will upgrade facilities and services that experience deterioration or obsolescence in existing developed areas of the City, as funding permits, to maintain levels of public service established by the City.
Policy PUBLIC-1.6	The City will require that the methods, materials, and design of infrastructure and utilities achieve the City's environmental, public health and safety, and community character goals and policies, in addition to the City's level of service standards for public services, facilities, and infrastructure.
Policy PUBLIC-1.7	New development projects shall provide compatible utility services in common trenching to minimize the land required and ongoing costs for underground services.
Goal PUBLIC-7	**Fire protection services, staffing, and deployment adequate to serve the needs of existing and planned development.**
Policy PUBLIC-7.1	The City will ensure that adequate fire flow pressure is available in relation to structure size, design, requirements for construction, and/or built-in fire protection systems. Maintenance of adequate fire flows includes factors such as adequate storage, system gridding, hydrant spacing, and spacing and sizing of water mains, as specified in the City's Water Master Plan.
Policy PUBLIC-7.2	For new development, the City will require a minimum fire flow pressure of 1,500 GPM (sustainable for at least two hours) for residential use. For new development, the City will require a minimum fire flow pressure of approximately 3,600 GPM (sustainable for longer periods) for larger residences and for other building types, depending on the particular use and structure characteristics, and in coordination with the fire service provider.
Policy PUBLIC-7.3	The City will require that fire stations be located to ensure the appropriate level of service (including adequate response time per Policy Public 7.5), community compatibility, and efficiency, including the location of such facilities relative existing and planned public parks, libraries, and other activity centers.

TABLE 4.14-2 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO FIRE PROTECTION AND EMERGENCY RESCUE SERVICES** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
Policy PUBLIC-7.4	The City will coordinate with fire protection providers, including through reciprocity arrangements, to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate. The City will ensure consistency with National Fire Protection Association and Stanislaus Consolidated Fire Protection District response requirements.
Policy PUBLIC-7.5	The City will coordinate with fire protection providers to an emergency response system capable of achieving the following standards in 95% of all cases: first fire emergency response unit within six minutes of dispatch; full alarm assignment within 10 minutes of dispatch; second alarm assignment within 15 minutes of dispatch; and an Insurance Service Office (ISO) rating of Class 2 for areas within the City.
Policy PUBLIC-7.6	The City will work with property owners in existing developed portions of the City to achieve a minimum fire flow pressure of 1,500 GPM (sustainable for at least two hours) for residential use and approximately 3,600 GPM (sustainable for longer periods) for larger residences and for other building types, depending on the particular use and structure characteristics, and in coordination with the fire service provider.

Source: Riverbank General Plan, 2005-2025.

Fire and rescue emergency response in Riverbank is delivered by Station 36 for single engine responses. Larger incidents requiring more personnel and/or apparatus are handled by the addition of units from SCFPD Stations 31, 32, and 33, as well as automatic aid agreements with Oakdale City Fire

Department and Oakdale Rural Fire Protection District.[6] Mutual-aid agreements are also in place with all Stanislaus County fire protection agencies (17 total agencies), and with Escalon Fire Protection District is across the Stani-

[6] The SCFPD has initiated a Merged Headquarters Contract with both Oakdale City Fire and Oakdale Fire Protection District. As a result, the second due unit is always coming from the City of Oakdale.

slaus River from Riverbank in San Joaquin County. Additional units are dispatched according to incident type and location in the city.

The Riverbank General Plan establishes the following emergency response standards for fire protection in Riverbank:

- First fire emergency response unit within 6 minutes of dispatch (in 95 percent of all cases).
- Full alarm assignment within 10 minutes of dispatch (in 95 percent of all cases).
- Second alarm assignment within 15 minutes of dispatch (in 95 percent of all cases).
- An Insurance Service Office (ISO) rating of Class 2 for areas within the City.

Fire flow requirements established in the General Plan are discussed in Chapter 4.17 of this EIR.

In 2011, approximately 62 percent of SCFPD's service calls were emergency medical response and rescues, 8 percent were fires and 30 percent were other types of calls (false alarms, good intent, service calls, hazardous condition, etc.). SCFPD responded to 3,732 incidents between January 1, 2011 and December 31, 2011. Fire Station 36 received 1,523 calls during the same period.[7]

The current Insurance Services Office (ISO) rating in the City is Class 4. SCFPD staff indicated that to meet a Class 2 response SCFPD would need to triple SCFPD's current daily staffing. The funding is severely lacking and the District needs some type of assistance from SCFPD's constituents and/or the

[7] Mayotte, Stephen, Fire Chief, Stanislaus Consolidated Fire Protection District. Email communication with The Planning Center | DC&E, May 7, 2012.

Cities SCFPD serves to achieve the revenue needed. ISO will be out to start a review of the Oakdale City Fire Department in September 2012.[8]

SCFPD's long range goal is to increase the number of paid staff at each station from two to three and also to place another fire station in Riverbank within the Crossroads Specific Plan Area, located approximated one mile west of the RAAP site. SCFPD anticipates the eventual need for a third fire station in the Bruinville planning area on the east side of Riverbank as growth occurs. The formation of Community Services Districts and an improvement to SCFPD Development Fees will need to occur to be able to fund the anticipated staffing and capital assets for the two additional stations. With the current economic decline, construction of new fire stations is on indefinite hold until the economy turns around and there is significant improvement and growth in the SCFPD service area.[9]

3. Standards of Significance

The Plan would have a significant impact with regard to fire protection services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

4. Impact Discussion

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to

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[8] Mayotte, Stephen, Fire Chief, Stanislaus Consolidated Fire Protection District. Email communication with The Planning Center | DC&E, May 7, 2012.

[9] Mayotte, Stephen, Fire Chief, Stanislaus Consolidated Fire Protection District. Email communication with The Planning Center | DC&E, May 7, 2012.

maintain acceptable service ratios, response times, or other performance objectives.

The Plan would have a significant environmental impact if buildout would exceed the ability of fire and emergency responders to adequately serve the Plan Area, thereby requiring construction of new facilities or modification of existing facilities.

SCFPD staff indicated that the current ISO ratings in the city and the current fire station are inadequate to maintain acceptable service ratios and response times. As noted above, SCFPD currently does not meet the ISO ratings and buildout of the Plan would require an increase in SCFPD's daily staffing. The targeted response time would need a station more closely located to the Plan Area. The addition of a new fire station on the east side of the City near the RAAP would be necessary as the proposed Plan builds out. [10] The new station would need at least nine personnel hired for staffing purposes (three per shift), and the station would need a new Type 1 Engine, Type 3 Engine, and a Water Tender for apparatus. The planned Bruinville station would alleviate the need, but as mentioned above, without sufficient funding it is not known when the planned Bruinville station would be built. Implementation of Policy PUB-3 of the Specific Plan would require the City to ensure that financing of the new station would occur commensurate with development within the RAAP site. As result, a *less-than-significant* impact would occur.

5. Cumulative Impacts

This section analyzes potential cumulative impacts to SCFPD that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank SOI, as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in substantial adverse physical impacts asso-

[10] Mayotte, Stephen, Fire Chief, Stanislaus Consolidated Fire Protection District. Email communication with The Planning Center | DC&E, May 7, 2012.

ciated with the provision of new or physically altered fire protection facilities, or result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

As discussed above, SCFPD has a long range goal of constructing fire stations within the Crossroads Specific Plan Area and Bruinville planning area as growth occurs. Future development under the proposed Plan would require a Fire Station near the Plan Area at buildout. With Mitigation Measure PUB-1 in place, SCFPD would be able to fund the anticipated staffing and capitol assets for the additional station near the Plan Area. Consequently, buildout of the Plan would not contribute to a cumulative impact to fire protection facilities. Therefore, a *less-than-significant* cumulative impact would occur.

6. Impacts and Mitigation Measures

The following impacts and mitigation measures have been identified with regard to fire protection services.

Impact PUB-1: In order to improve response times and ISO ratings, a new fire station is required either in the Bruinville planning area or in the RAAP Plan Area. The addition of a new Fire Station on the east side of the City near the RAAP would be necessary as the proposed Plan builds out. The new station would need at least nine personnel hired for staffing purposes (3 per shift), and the station would need a new Type 1 Engine, Type 3 Engine, and a Water Tender for apparatus. This would be a *significant* impact.

> Mitigation Measure PUB-1: The additional personnel, station, and apparatus shall be incorporated into the RAAP Specific Plan and have benchmarks for when the staffing and facilities are added.
>
> Significance after Mitigation: This impact would be *less than significant* after implementation of this mitigation measure.

C. Schools

This section describes the regulatory framework, existing conditions, and potential environmental impacts from buildout of the Plan with regard to local public schools. The section considers the provision of school service to the Plan Area.

1. Regulatory Setting

a. State Law

Senate Bill 50 (SB50) [1998], which is funded by Proposition 1A, limits the power of Cities and Counties to require fiscal mitigation on home developers as a condition of approving new development and provides for a standardized developer fee. SB50 generally provides for a 50/50 State and local school facilities funding match, with a $9.2 billion bond authorized to fund the State portion. SB50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding and whether the school district meets certain additional criteria involving bonding capacity, year-round school and the percentage of moveable classrooms in use.

California Government Code Sections 65995-65998 sets forth provisions to implement SB 50. Specifically, according to Section 65995(h), the payment of statutory fees is "deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization...on the provision of adequate school facilities." The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

b. Local Policies and Regulations

The City of Riverbank addresses the level of service in public schools in the General Plan. Applicable goals and policies from the General Plan are listed below in Table 4.14-3.

TABLE 4.14-3 **RIVERBANK GENERAL PLAN GOALS AND POLICIES PERTAINING TO SCHOOLS**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.1	The City will coordinate the planning and construction of capital improvements with the timing of urban development within the Planning Area.
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.4	The City shall give priority to serving areas within the existing City limits as of the adoption of this General Plan based on current infrastructure and service capacity. New growth proposed outside existing City limits is responsible for providing, or paying a proportionate share of the cost of, public facilities and infrastructure adequate to serve the needs of such development according to the General Plan, a specific plan (if prepared for such development), and/or any infrastructure Master Plan that covers such development through the use of a City-approved development agreement. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities

Goal/Policy Number	Goal/Policy Content
	will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.5	The City will upgrade facilities and services that experience deterioration or obsolescence in existing developed areas of the City, as funding permits, to maintain levels of public service established by the City.
Policy PUBLIC-1.6	The City will require that the methods, materials, and design of infrastructure and utilities achieve the City's environmental, public health and safety, and community character goals and policies, in addition to the City's level of service standards for public services, facilities, and infrastructure.
Policy PUBLIC-1.7	New development projects shall provide compatible utility services in common trenching to minimize the land required and ongoing costs for underground services.
Goal PUBLIC-9	**School facilities that serve existing and future needs and complement our neighborhoods.**
Policy PUBLIC-9.1	New development projects shall provide impact fees, land dedication, school construction, special taxes, and/or other means to the satisfaction of affected school districts to ensure levels of service, in accordance with State law.
Policy PUBLIC-9.2	The City will circulate development application materials to the appropriate school district representatives in association with CEQA and project review and incorporate school district comments into City actions on such development projects.
Policy PUBLIC-9.3	The City will work with local school districts in long-range land use planning to allow planning for school facilities for servicing new growth.
Policy PUBLIC-9.4	The City will work with local school districts to take advantage of joint-use opportunities that could benefit the City, especially for park and recreation facilities that could be used by schoolchildren during the school day and the community in the evening, on weekends, and during school breaks.
Policy PUBLIC-9.5	The City will ensure that areas around school sites are designed to allow easy pedestrian and bicycle access from surrounding neighborhoods. New development project applicants shall demonstrate to the satisfaction of the City that there are safe routes to and from school sites from surrounding planned neighborhoods prior to approval.

Source: Riverbank General Plan, 2005-2025.

2. Existing Conditions

The City of Riverbank is served by three school districts: Riverbank Unified, Sylvan Union, and Modesto City Schools.

a. Riverbank Unified School District

Riverbank Unified School District (RUSD) is the main school district serving the City of Riverbank. RUSD offers kindergarten through twelfth grade education. The District is comprised of three elementary schools, one middle school, one school offering kindergarten through eighth grade, one high school, and one alternative high school.[11] The following are schools in the RUSD:

- Adelante High School, Alternative High School, *6200 Claus Road, Riverbank.*
- California Avenue Elementary, *3800 California Avenue, Riverbank.*
- Cardozo Middle School, *3625 Santa Fe Avenue, Riverbank.*
- Mesa Verde Elementary, *4850 Mesa Drive, Oakdale.*
- Rio Altura Elementary, *2400 Stanislaus Street, Riverbank.*
- Riverbank High School, *6200 Claus Road, Riverbank.*
- Riverbank Language Academy, *2400 Stanislaus Street, Riverbank.*

b. Sylvan Union School District

Sylvan Union School District (SUSD) is comprised of ten elementary schools and three middle schools, and provides kindergarten through eighth grade instruction. SUSD's Crossroads Elementary School is located in southwest Riverbank and serves the Crossroads Specific Plan area. However, the District primarily serves the north portion of the City of Modesto. Of the elementary school students from Riverbank who attend SUSD, most attend Crossroads Elementary located at 5800 Saxon Way in Riverbank, Stockard Coffee Elementary School located at 3400 Northview Drive in Modesto, and Sylvan Elementary School located at 2908 Coffee Road in Modesto. SUSD middle school students from Riverbank attend Elizabeth Ustach Middle School, located at 2701 Kodiak Drive in Modesto.

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[11] City of Riverbank, 2009. *Draft Environmental Impact Report for the 2005-2025 General Plan Update,* page 4.14-5.

c. Modesto City Schools

Modesto City Schools (MCS) provides kindergarten through twelfth grade instruction, primarily serving students from the City of Modesto. Students from Riverbank who graduate from schools in the Sylvan Union School District attend Modesto City Schools for high school. James Enochs High School, at 3201 Sylvan Avenue in Modesto, serves the entire section of Riverbank within MCS boundaries.

3. Standards of Significance

The Plan would have a significant impact with regard to schools if it would result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

4. Impact Discussion

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

The Plan would have a significant environmental impact if buildout would substantially increase the population of Riverbank, thereby requiring construction of new school facilities or modification of existing facilities in order to accommodate growth in the student body.

The Riverbank General Plan includes Goal PUBLIC-9, which seeks to ensure school facilities that serve existing and future needs and complement neighborhoods. The General Plan does not establish a service ratio, which when exceeded, would require the construction of new facilities. However, buildout of the Plan would not result in a substantial population increase, either directly, through the construction of new housing, or indirectly, through the creation of new jobs that would attract new residents to the

Riverbank area. Consequently, the incremental buildout of the Plan through 2035 would not substantially affect the size of the student body at schools in Riverbank area schools. As such, the Plan would not require the construction or expansion of school facilities and associated impacts would be *less than significant.*

5. Cumulative Impacts

This section analyzes potential cumulative impacts to public schools that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank SOI, as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in a substantial increase in the size of the student population at Riverbank area schools, necessitating the construction or new or expanded school facilities.

By itself, buildout of the Plan would not result in substantial population growth in Riverbank or the surrounding area, and therefore would not substantially increase the student population at Riverbank area schools or necessitate the construction of new or expanded school facilities. Therefore, buildout of the Plan would not contribute to a cumulative impact to public schools. Additionally, as noted above, the General Plan includes Policies PUBLIC-9.1 through PUBLIC-9.5, which seek to ensure that public school service is coordinated with future growth in Riverbank. Policies PUBLIC-1.1 through PUBLIC-1.7 seek to ensure that funding will be available to support the construction and expansion of school facilities as required to support future growth in the Riverbank SOI.

Overall, cumulative impacts to public schools from buildout of the Plan would be *less than significant.*

6. Impacts and Mitigation Measures

Since there are no significant impacts related to public schools as a result of the Plan, no mitigation measures are required.

D. Library Service and Facilities

This section describes the regulatory framework, existing conditions, and potential environmental impacts from buildout of the Plan with regard to local libraries. The section considers the provision of library service to the Plan Area.

1. Regulatory Framework

There are no federal or State regulations related to library services in Riverbank; however, the City of Riverbank addresses library services in the General Plan. Applicable goals and policies from the General Plan are listed below in Table 4.14-4.

2. Existing Conditions

The Stanislaus County Library (SCL) system consists of a main library in Modesto and 12 other branches, one branch of which is located in Riverbank, at 3442 Santa Fe Street. The 3,594 square-foot Riverbank branch employs two full-time and two part-time staff.[12] The branch is open 38 hours per week (closed Fridays and Sundays), and its catalogue contains approximately 26,000 books, videos, tapes, and other audio-visual items. There are eight public internet computers (one of which is reserved exclusively for use by children) and three computers that are used for accessing the library catalog. The Riverbank General Plan establishes a service ratio of 0.5 square feet of public library facilities per resident in the city. With a branch library of 3,594 square feet, Riverbank's service level is now approximately 0.18 square feet per capita.

[12] Charles Teval, Riverbank Library. Personal communication with Lisa Katz, The Planning Center | DC&E, February 25, 2010.

TABLE 4.14-4 **RIVERBANK GENERAL PLAN POLICIES PERTAINING TO LIBRARY SERVICES AND FACILITIES**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.1	The City will coordinate the planning and construction of capital improvements with the timing of urban development within the Planning Area.
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.4	The City shall give priority to serving areas within the existing City limits as of the adoption of this General Plan based on current infrastructure and service capacity. New growth proposed outside existing City limits is responsible for providing, or paying a proportionate share of the cost of, public facilities and infrastructure adequate to serve the needs of such development according to the General Plan, a specific plan (if prepared for such development), and/or any infrastructure Master Plan that covers such development through the use of a City-approved development agreement. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that

Goal/Policy Number	Goal/Policy Content
	serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.5	The City will upgrade facilities and services that experience deterioration or obsolescence in existing developed areas of the City, as funding permits, to maintain levels of public service established by the City.
Policy PUBLIC-1.6	The City will require that the methods, materials, and design of infrastructure and utilities achieve the City's environmental, public health and safety, and community character goals and policies, in addition to the City's level of service standards for public services, facilities, and infrastructure.
Goal PUBLIC-10	**Public library facilities adequate to accommodate existing and future needs.**
Policy PUBLIC-10.1	The City will develop additional library facilities, whether through expansion of existing facilities or new facilities, as feasible, and assist the library administration to secure State and federal funds for facilities and services.
Policy PUBLIC-10.2	The City will coordinate with applicable library service providers to accommodate the development of new library facilities in conjunction with new development areas.
Policy PUBLIC-10.3	The City's goal is to have 0.5 square feet of public library facilities per capita within the City. The City will plan and budget and coordinate with service providers with this service standard as a goal.

Source: Riverbank General Plan, 2005-2025.

3. Standards of Significance

The Plan would have a significant impact with regard to library services if it would result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, or result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

4. Impact Discussion

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, or result in the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

The Plan would have a significant environmental impact if buildout would exceed service ratios established in the Riverbank General Plan, thereby requiring construction of new facilities or modification of existing facilities. As described above, Policy PUBLIC-10.3 of the General Plan establishes a target of 0.5 square feet of library facilities per resident, and there are currently about 0.18 square feet per capita available to residents. Buildout of the Plan would not result in a substantial population increase, either directly, through the construction of new housing, or indirectly, through the creation of new jobs that would attract new residents to the Riverbank area. Consequently, the incremental buildout of the Plan through 2035 would not substantially affect the ratio of library facilities to residents in Riverbank, and associated impacts would be *less than significant*.

5. Cumulative Impacts

This section analyzes potential cumulative impacts to library facilities that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank SOI, as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in a substantial increase in the use of existing library facilities necessitating the construction or new or expanded facilities.

By itself, buildout of the Plan would not result in substantial population growth in Riverbank or the surrounding area, and therefore would not substantially increase the use of library facilities or cause the square foot to resi-

dent ratio established in the General Plan to be exceeded. Therefore, buildout of the Plan would not contribute to a cumulative impact to library facilities. Additionally, as noted above, the General Plan includes policies, including Policy PUBLIC-10.2, which ensures that the adequate provision of library services will be considered as development occurs. Consequently, cumulative impacts to library facilities from buildout of the Plan would be *less than significant.*

6. Impacts and Mitigation Measures

Since there are no significant impacts related to library facilities as a result of the Plan, no mitigation measures are required.

4.15 RECREATION

This chapter describes existing parks and recreational facilities conditions in Riverbank and the potential impacts of the Plan on these facilities.

A. Regulatory Setting

This section describes State and local regulations pertaining to recreational facilities in Riverbank.

1. The Quimby Act

Since the passage of the 1975 Quimby Act (California Government Code Section 66477), cities and counties have been authorized to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities.[1] A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or park land and the type of development project upon which the fee is imposed. Jurisdictions with a high ratio of park space to inhabitants can set a standard of up to 5 acres per 1,000 persons for new development. Jurisdictions with a lower ratio can only require the provision of up to 3 acres of park space per 1,000 residents. The calculation of a jurisdiction's park space to population ratio is based on a comparison of the population count of the last US Census to the amount of publicly owned parkland. In the City of Riverbank, the Recreation Department uses level of service ratio of 5 acres of usable park land per 1,000 residents.[2]

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[1] Westrup, Laura, 2002. *Quimby Act 101: An Abbreviated Overview, Sacramento: California Department of Parks and Recreation*, available at http://www.parks.ca.gov/pages/795/files/quimby101.pdf.

[2] Fitzpatrick, Sue, Director, City of Riverbank Recreation Department. Personal communication with Lisa Katz, The Planning Center | DC&E, March 3, 2010.

2. City of Riverbank General Plan

The Riverbank General Plan includes several goals and policies that relate to recreation. Table 4.15-1 lists these goals and policies.

B. Existing Conditions

The City of Riverbank owns and maintains over 114 acres of developed and undeveloped parkland for the use and enjoyment of residents and visitors. Approximately 62 of the total 114 acres in the City are developed parklands. Jacob Meyers Park, the largest city-owned park, has 8 acres of developed parkland, and includes playground equipment, a barbecue area, picnic tables, restrooms, a boat ramp, fishing, and a picnic gazebo. Table 4.15-2 lists the 16 parks in the City of Riverbank, and provides details about each park including park size, address, and facilities located at the park site.

In addition to parks, the City owns and maintains other community facilities. These facilities include a community center, a Teen Center, a scout lodge, and a swimming pool. The City and the Riverbank Unified School District have a joint-use agreement that permits public use of the school gymnasium. The City's Parks and Recreation Department coordinates a variety of programs and events, and hosts clubs and other community organizations that utilize these facilities.

The City also has plans for future recreational facilities. The development of Silva Park was initiated in two phases, Phase I is complete and Phase II will incorporate a shade structure, picnic area, restrooms, and water play equipment.[3] The City's Sports Complex was also developed in two phases; Phase II will include the development of 5 acres into a bicycle motocross (BMX)

[3] City of Riverbank Parks and Recreation Department, Fall/Winter 2009-2010 Activity Guide, http://www.riverbank.org/Depts/Recreation/Shared%20Documents/Riverbank_Activity_Guide_2009-2010.pdf, accessed on April 5, 2010.

TABLE 4.15-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO RECREATION**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC- 1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Goal PUBLIC-11	**Develop a diversified park system in a variety of scales and environments to meet existing and future needs.**
	New developments shall set aside land and dedicate improved parkland according to City standards at a minimum rate of five acres per 1,000 residents. Landscaped areas along streets or other rights-of-way without trails, or other park and recreational facilities do not count toward this standard. Other open spaces without park facilities do not count toward the five-acre parkland minimum, although this land may be required to meet open space or landscaping requirements of the City's applicable development codes. For small projects, in cases of financial hardship, or where the required facility would serve areas outside the proposed project or plan, the City may allow participation in an in-lieu fee program to provide improved parkland. The distribution of parkland shall be as follows: ♦ Community Parks: Minimum of 1.5 acres per 1,000 residents. Minimum of 15 acres in size. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria. ♦ Neighborhood Parks: Minimum of 1.5 acres per thousand residents. Minimum of 5 acres in size. Maximum of ½ mile from all proposed residences. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria. ♦ Playgrounds, plazas, tot lots, linear parks, recreation trails,

TABLE 4.15-1 **RIVERBANK GENERAL PLAN POLICIES RELATED TO RECREATION** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
	and other similar parklands may count for up to 1.5 acre per thousand of the 5-acre standard. Maximum of ¼ mile from all proposed residences. There is no minimum size. Specific design and facilities are as directed by the City based on population density, demographic structure, community preferences, use levels, and other criteria.
Policy PUBLIC-11.2	The City of Riverbank will maintain park in-lieu fees at a level adequate to provide parks in a ratio of acres to population, as established by this element.
Policy PUBLIC-11.3	The City will maintain and improve existing parks and develop new parks to serve existing developed portions of the City, as feasible.
Policy PUBLIC-11.4	The City will encourage the use of greenways and natural open space areas for certain compatible recreational opportunities, such as pedestrian pathways, while preserving important ecological habitats.

Source: City of Riverbank General Plan 2005-2025.

park.[4] Phase III of Jacob Meyers Park will include an outdoor amphitheater, a gazebo, bird watching areas, and a parking lot.[5]

New parks in the City are funded through grants or park development funds. Park development funds are replenished from development fees, such as fees from the Quimby Act, allow the City to acquire more parkland, pay for park amenities, and thereby maintain its park service standards. The City's stated policy is to provide a service ratio of 5 acres of park land per 1,000 people.[6]

[4] Fitzpatrick, Sue, Director, City of Riverbank Recreation Department. Personal communication with Lisa Katz, The Planning Center | DC&E, March 3, 2010.

[5] Fitzpatrick, Sue, Director, City of Riverbank Recreation Department. Personal communication with Lisa Katz, The Planning Center | DC&E, March 3, 2010.

[6] Fitzpatrick, Sue, Director, City of Riverbank Recreation Department. Personal communication with Lisa Katz, The Planning Center | DC&E, March 3, 2010.

TABLE 4.15-2 **PARK AND RECREATIONAL FACILITIES IN RIVERBANK**

Park Name	Acres	Address	Facilities
Castleberg Park	12	5854 8th Street	Playground equipment, barbecue area, picnic tables, restrooms, picnic gazebo, baseball/softball fields, walking trail, basketball court
Community Center (Veteran's Park)	5	3600 Santa Fe	Playground equipment, picnic tables, picnic gazebo, swimming pool, meeting hall to rent
Harless Park	2.8	5600 Litt Road	Playground equipment, basketball court
Hutcheson Park	1	3411 High Street	Picnic tables
Jacob Myers Park	55	23653 S. Santa Fe	Playground equipment, barbecue area, picnic tables, restrooms, walking trail, camping, picnic gazebo, horseshoe pits, boat ramp, fishing
Pioneer Park	3	3017 High Street	Playground equipment, barbecue area, picnic tables, restrooms, baseball/softball fields, basketball court
Plaza Del Rio Park	0.5	Third and Santa Fe Streets	Stage area, water feature
Rotary Centennial Park	3	5656 Prospectors Parkway	Playground equipment
Sanfreno Park	5	2308 McAllister Lane	Playground equipment, soccer field
Silva Park	8	5800 Antique Rose Way	Playground equipment, basketball court
Sorenson Park	2.3	2522 Donner Trail	Playground equipment, barbecue area, picnic tables
Sports Complex	6 dev. 5 undev.	2119 Morrill Road	Football, soccer field, snack bar
Staley Park-Skate Park	0.5	3036 Santa Fe Street	Picnic tables, restrooms, skate park

TABLE 4.15-2 **PARK AND RECREATIONAL FACILITIES IN RIVERBANK** (CONTINUED)

Park Name	Acres	Address	Facilities
Whorton Park	1	6100 Memphis Street	Playground equipment, barbecue area, basketball court
Zerillo Park	5	2800 Briarcliff Drive	Playground equipment, barbecue area, picnic tables, restrooms, volleyball court, tennis courts, basketball court
Unnamed open space land	5	Eleanor Street	N/A

Source: City of Riverbank General Plan 2005-2025; Sue Fitzpatrick, City of Riverbank Recreation Department, Director, personal email communication with Lisa Katz, DC&E, March 3, 2010.

With a population of approximately 16,000 people and a total of 114 acres of parkland, the City is currently meeting this standard.

The closest regional recreational open space facilities to the Plan Area are Woodward Reservoir Regional Park and Stanislaus County Park, located approximately 8.5 miles to the northeast.

C. Standards of Significance

The Draft RAAP Site Specific Plan would have a significant recreation impact if it would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

D. Impact Discussion

1. Project Impacts

a. Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

The Plan would have a significant environmental impact if it would accelerate physical deterioration of neighborhood and regional parks. Such impacts could result from a substantial increase in resident or employment population.

As described in Chapter 4.14 of this EIR, the Plan would not directly increase the population of Riverbank because it does not propose the construction of housing, and substantial indirect population growth is not anticipated because new jobs created with implementation of the Plan would largely be filled by residents of Riverbank and neighboring communities. Therefore, buildout of the Plan would not result in increased use of park and recreational facilities due to a substantial increase in the number of users. Additionally, proposed design guidelines included in the Plan stipulate that plazas, green spaces, and pedestrian areas should be incorporated into site design, and that employees should be provided with break areas and gathering spaces. As such, with implementation of these guidelines, buildout of the Plan would result in the construction of new recreational space for the use of future employees and patrons of businesses on the redeveloped in the Plan Area. Consequently, overall, impacts associated with the increased use of existing parks resulting from buildout of the Plan would be *less than significant*.

b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The Plan would have a significant environmental impact if it would require the provision of new or altered parks and recreational facilities. Pursuant to the Quimby Act, construction or expansion of facilities would be required if buildout of the Plan would cause the parks to resident ratio in Riverbank to exceed the established standard of 5 acres per thousand residents.

As explained above, however, buildout of the Plan would not result in a substantial population increase, either directly, through the construction of new housing, or indirectly, through the creation of new jobs that would attract new residents to the Riverbank area. Consequently, the incremental buildout of the Plan through 2035 would not substantially affect the parks to resident ratio in Riverbank. Therefore, overall, impacts associated with the construction or expansion of recreational facilities from buildout of the Plan would be *less than significant.*

2. Cumulative Impacts

This section analyzes potential cumulative impacts to parks and recreational facilities that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank sphere of influence (SOI), as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in a substantial increase in the use of existing parks and facilities, or require the construction or expansion of recreational facilities.

By itself, buildout of the Plan would not result in substantial population growth in Riverbank or the surrounding area, and therefore would not substantially increase the use of parks and facilities or cause the established Quimby Act parks to resident ratio to be exceeded. Therefore, buildout of the Plan would not contribute to a cumulative impact to parks and recreational facilities. Additionally, as noted above, the Plan includes design standards which would require the provision of plazas, green spaces, and gathering places as buildout occurs. Consequently, cumulative impacts to parks and recreational facilities from buildout of the Plan would be *less than significant.*

E. Impacts and Mitigation Measures

Since there are no significant impacts related to parks and recreational facilities as a result of the Plan, no mitigation measures are required.

4.16 TRANSPORTATION AND TRAFFIC

This chapter discusses transportation and traffic in the Plan Area and evaluates the potential impacts associated with the draft RAAP Site Specific Plan. This chapter is based primarily on a Transportation Impact Analysis (TIA) prepared for the project by Fehr & Peers Transportation Consultants in September, 2012. The TIA estimates the increase in traffic in the Plan Area that would result from implementation of the RAAP Specific Plan, in both the near and long term, and describes the resulting impacts on the roadway system. Further, transportation and traffic impacts which may result during the construction of the RAAP Specific Plan are identified and analyzed. The TIA, including all technical appendices, is included as Appendix E of this Draft EIR.

A. Regulatory Framework

This section describes federal, State, and local environmental laws and policies that are relevant to the CEQA review process for transportation and circulation.

1. State and Regional Regulations

a. California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for the maintenance and operation of state routes and highways. In Riverbank, Caltrans' facilities include State Route 108. Caltrans maintains a volume monitoring program and reviews local agencies' planning documents (such as this EIR) to assist in its forecasting of future volumes and congestion points. Guide for the Preparation of Traffic Impacts Studies (December 2002) published by Caltrans is intended to provide a consistent basis for evaluating traffic impacts to State facilities. The City recognizes that "Caltrans endeavors to maintain a target level of service (LOS) at the transition between LOS 'C' and LOS 'D'... on State highway facilities;" however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult

with Caltrans to determine the appropriate target level of service.[1] In addition, Caltrans states that for existing State highway facilities operating at less than the target level of service, the existing level of service should be maintained.

b. Stanislaus Council of Governments

The Stanislaus Council of Governments (StanCOG) is the Metropolitan Planning Organization (MPO) for the Stanislaus Region as designated by the Federal government, and the Regional Transportation Planning Agency (RTPA) as designated by the State of California.

StanCOG is a council of city and county governments comprised of the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford, and the County of Stanislaus, that was established in 1971 by a Joint Powers Agreement (JPA) to address regional transportation issues. The organization is responsible for developing and updating a variety of transportation plans and for allocating the federal and state funds to implement them.

StanCOG is responsible for the preparation the Regional Transportation Plan (RTP), which identifies transportation network improvements and investments that are needed to accommodate existing populations and planned growth. Other adopted documents include the regional Expressway Study, Sustainable Communities Strategies, and the Non-Motorized Transportation Plan.

2. City of Riverbank General Plan

The City of Riverbank General Plan identifies policies related to transportation standards. Project consistency with the General Plan is analyzed below in Table 4.16-1. While this Draft EIR analyzes the consistency of the proposed RAAP Specific Plan with the City of Riverbank General Plan pursuant to California Environmental Quality Act (CEQA) Guidelines Section

[1] California Department of Transportation, *Guide for the Preparation of Traffic Impact Studies*, December 2002.

15125(d), the City of Riverbank would ultimately make the determination of the project's consistency with the General Plan. Environmental impacts associated with inconsistency with General Plan goals and policies are addressed under the appropriate impact discussion sections of this Draft EIR.

B. Existing Conditions

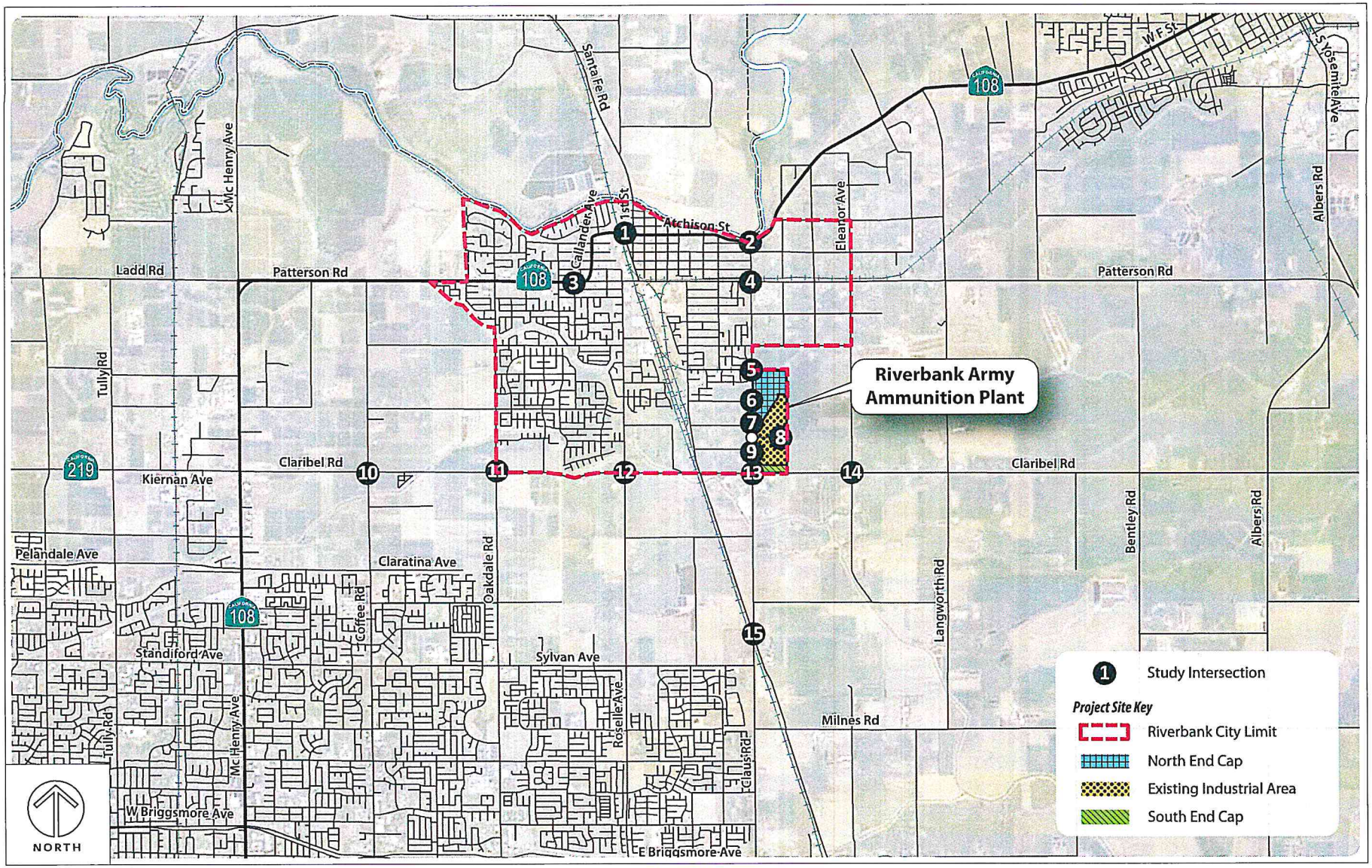
This section describes transportation facilities in the project study area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities in the project site vicinity. Rail facilities are also discussed as well as existing traffic operations.

1. Roadway Network

The project site is located at the northeast corner of the Claus Road/Claribel Road intersection in Riverbank, a city in Northern Stanislaus County. Adjacent land uses are primarily agricultural and industrial, with some residential uses. The roadways in the study area are described below and their locations in relation to the site are shown on Figure 4.16-1.

a. **Claribel Road** is an east-west arterial roadway that forms the southern boundary of the project site. One travel lane per direction is provided on Claribel Road in the study area. West of McHenry Avenue (State Route 108), the roadway continues as Kiernan Avenue (State Route 219), to State Route 99. No bicycle or pedestrian facilities are provided on Claribel Road and no on-street parking is permitted in the study area. The posted speed limit on Claribel Road is 45 miles per hour (mph) in the study area.

b. **Claus Road** is a north-south two-lane arterial that forms the western boundary of the project site. It connects State Route 108 in the north to State Route 132 (Yosemite Avenue) in the south in Modesto. No on-street parking is permitted along the project frontage. Bike lanes and sidewalks are provided on Claus Road between California Street and Patterson Road. A two-way left-turn lane is provided along a portion of the project frontage in addition to approximately 6-foot shoulders on both



Source: Fehr & Peers, 2012.

FIGURE 4.16-1

STUDY INTERSECTION LOCATIONS

TABLE 4.16-1 **PROJECT CONSISTENCY WITH CITY OF RIVERBANK GENERAL PLAN POLICIES: TRANSPORTATION AND TRAFFIC**

General Plan Policy	Consistency with General Plan	Analysis
Policy CIRC-1.1 Approved plans, projects, and subdivision requests in new growth areas shall include the construction or pro-rata funding of transportation infrastructure that includes a connected and integrated system of bicycle facilities and pedestrian facilities, designed to comply with the Americans with Disabilities Act.	Yes	Roadways along the project site and primary internal roadways will be improved to provide bicycle, pedestrian and transit accommodations. All new facilities will be designed to meet ADA standards in place at the time of construction.
Policy CIRC-1.2 Approved plans, projects, and subdivision requests in new growth areas shall provide a fully connected network of smaller roadways that provide many alternative routes between each point of origin and destination.	No	No internal connections are provided between the three areas of the site due to the existing development conditions on the site and security concerns for existing site users.
Policy CIRC-1.3 Approved projects, plans, and subdivision requests in new growth areas shall arrange streets in an interconnected block pattern, so that pedestrians, bicyclists, and drivers are not forced onto arterial streets for inter- or intra-neighborhood travel. This approach will also ensure safe and efficient movement of emergency responders.	No	No internal connections are provided between the three areas of the site due to the existing development conditions on the site and security concerns for existing site users. Emergency vehicle connections will be provided.
Policy CIRC-1.4 Approved projects, plans, and subdivision requests with an internal street network shall provide an internal connectivity index of 1.4 or higher. The connectivity index is calculated by dividing the total number of road segments the number of nodes. Nodes are intersections plus cul-de-sacs. Roadway segments are between intersections. Cul-de-sacs are prohibited except where physical constraints make any other roadway solution impossible. The City may require higher levels of connectivity, beyond this standard, and will review plans and projects to take advantage of opportunities to provide more connectivity.	No	Limited ability to provide internal connections between the three areas of the site due to the existing development conditions on the site and security concerns of existing site users.
Policy CIRC-1.5 Approved projects, plans, and subdivision requests shall connect with adjacent roadways and stubbed roads and shall provide frequent stubbed roadways in coordination with future planned development areas. Plans and projects shall connect to adjacent planned development areas and adjacent roadways at a minimum of 600-foot intervals. This minimum interval does not apply to development areas that are adjacent to existing or planned future limited-access highways, freeways, or expressways.	Yes	Roadway connections to Claus and Claribel Roads are proposed at approximately 600-foot intervals. A new east-west roadway is planned to connect with parcels to the east of the site.

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TABLE 4.16-1 **PROJECT CONSISTENCY WITH CITY OF RIVERBANK GENERAL PLAN POLICIES: TRANSPORTATION AND TRAFFIC** *(CONTINUED)*

General Plan Policy	Consistency with General Plan	Analysis
Policy CIRC-1.9 In new and existing developed areas, the City will invest in a convenient, well-maintained, and safe system of pedestrian and bicycle paths that connect residences with shopping centers, public buildings, parks, places of employment, and schools.	Yes	Project will provide pedestrian and bicycle system, connecting to planned transit stops.
Policy CIRC-1.12 The City will use Level of Service D as the goal for roadway segments, as measured on a daily basis. The City's goal for peak hour intersection level of service is LOS D. The City may elect to exceed of these standards in favor of other community planning and environmental goals and policies.	Short-term, yes, with Mitigation; long-term potentially significant and unavoidable	LOS D or better can be provided at study intersections in the Exiting Plus Project condition with the implementation of Mitigation; in the Cumulative Condition, intersections may degrade beyond the planned level of service standard as the implementation of regional improvements to mitigate traffic conditions cannot be assured.
Policy CIRC-1.14 The City will ensure provision of signage and secure storage facilities in appropriate locations for bicycles.	Yes, with Mitigation	Bicycle parking shall be incorporated into the development.
Policy CIRC-1.15 The City will ensure that the pedestrian network is safe, accessible, attractive and efficient, running largely along public spaces (including streets and open spaces) fronted by houses, and avoids uses that generate major breaks in surveillance on routes to and from public transport and other routes used at night.	Yes	Pedestrian facilities will be constructed along the project frontage and on internal roadways. Pedestrian pathways will be constructed connecting parking areas to main building entrances. Buildings will be oriented towards pedestrian connections.
Policy CIRC-2.2 The City will not allow large, unbroken surface parking lots, which unnecessarily inhibit travel on foot and by bicycle. Please refer also to Community Character and Design Element policies that address the location and nature of surface parking.	Yes	Small parking areas are proposed to serve each building area.
Policy CIRC-2.3 Approved projects, plans, and subdivisions shall provide shade trees in parking areas at a ratio of at least one tree for every four parking spaces. These trees shall be dispersed throughout the parking area.	Yes	Trees will be incorporated into parking areas.
Policy CIRC-2.4 The City will ensure that redevelopment and revitalization efforts in the existing City are designed to accommodate and encourage pedestrian and bicycle travel, as well as public transit options, as such options become more widely available.	Yes	The existing developed area of the site will be connected to new bicycle and pedestrian facilities, which will connect to new transit stops to facilitate transit use once that option become available in the site vicinity.

TABLE 4.16-1 **PROJECT CONSISTENCY WITH CITY OF RIVERBANK GENERAL PLAN POLICIES: TRANSPORTATION AND TRAFFIC** (CONTINUED)

General Plan Policy	Consistency with General Plan	Analysis
Policy CIRC-2.5 The City will be flexible in parking requirements or eliminate off-street parking requirements for redevelopment, infill, and multifamily projects by allowing cooperative shared use of parking between properties with different parking demand peaking periods, utilization of on-street parking spaces to meet parking requirements, allowing parking reductions for projects located in walkable areas with improvements that accommodate alternative forms of travel, and allowing parking reductions for multi-family development to reflect the trip generation characteristics of this type of development.	Yes	Flexible parking standards have been identified in the Specific Plan that allow for parking demand studies to be complete to determine the parking supply needed to accommodate future development.
Policy CIRC-2.6 The City will pursue in the existing developed area, and require in new growth areas pedestrian amenities, such as street furniture, shade trees, pedestrian lighting, water fountains, and pedestrian oriented signage.	Yes	Pedestrian facilities will be constructed along the project frontage and on internal roadways. Pedestrian pathways will be constructed connecting parking areas to main building entrances. Buildings will be oriented towards pedestrian connections. Appropriate pedestrian scale lighting shall be incorporated in to the overall design, in addition to landscaping.
Policy CIRC-3.1 The City will coordinate planning efforts and project entitlements with the Riverbank Oakdale Transit Agency, the Stanislaus Area Regional Transit District (START), and any future providers serving Riverbank to enhance and expand transit services throughout the City and surrounding region.	Yes	Transit agencies will be consulted in the final placement of transit amenities on the site.
Policy CIRC-3.3 Approved plans, projects, and subdivision requests will accommodate transit facilities consistent with transit agency planning.	Yes	Potential transit stops have been identified along the project frontage; the final placement and supporting facility needs will be determined in consultation with the transit agencies.
Policy CIRC-4.1 The City will work with relevant public agencies and the railroad to appropriately regulate the movement of truck traffic and hazardous materials throughout the City.	Yes	A truck routing plan will be developed for the site identifying truck connections to the regional roadway network.

sides of the street. The posted speed limit on Claus Road varies from 35 to 45 mph. Full access is provided to the site from two driveways on Claus Road. Two other driveway connections are provided, but are currently not in use.

c. **Coffee Road** is a north-south arterial roadway located approximately 3 miles west of the site. This facility connects State Route 108 (Patterson Road) in the north to Modesto in the south. In the study area, Coffee Road is a two-lane facility with a posted speed limit of 55 mph. No pedestrian or bicycle facilities are provided on the roadway, which primarily serves agricultural uses.

d. Oakdale Road is a north-south arterial roadway located approximately 2 miles west of the site. This facility connects State Route 108 (Patterson Road) in the north to Modesto in the south. In the study area, Oakdale Road is a four-lane facility north of Claribel Road and a two-lane facility are provided north of Claribel Road, where residential and retail uses have been developed. No pedestrian or bicycle facilities are provided to the south of Claribel Road, were agricultural uses are primarily served.

e. **Roselle Avenue** is a north-south arterial roadway located approximately 1 mile west of the site. This facility connects State Route 108 (Patterson Road) in the north to Modesto in the south. In the study area, Roselle Avenue is a two-lane facility with a posted speed limit of 45 mph. This roadway is being widened as land is developed along the corridor to provide additional capacity at intersections and pedestrian facilities. No pedestrian or bicycle facilities are provided to the south of Claribel Road.

f. **Patterson Road (State Route 108)** is an east-west arterial roadway. Between McHenry Avenue and Callander Avenue, Patterson Road is designated as State Route 108. West of the City of Riverbank, Patterson Road generally provides two travel lanes with no pedestrian or bicycle facilities. Within Riverbank, the roadway expands to provide two travel lanes in each direction in addition to turn pockets and sidewalks. East of Callander Avenue, Patterson Road provides one travel lane per direction, with some pedestrian and bicycle facilities. The speed limit on Patterson varies from 50 mph in the undeveloped areas to 25 to 35 mph through

Riverbank. The City of Riverbank has requested Surface Transportation Assistance Act (STAA) Terminal Access designation from Caltrans for State Route 108. However, several intersections along the route do not meet turn radius requirements and improvements may be needed.

g. **Atchison Street (State Route 108)** is an east-west arterial that connects Riverbank to Oakdale. It is designated as State Route 108 and generally forms the northern boundary of Riverbank. Bicycle lanes and sidewalks are generally provided with one travel lane per direction. On-street parking is also permitted.

h. **Townsend Avenue** is a two-lane east-west local street that connects Claus Road to Terminal Avenue. Residential uses front the south side of the street and a railroad runs parallel to the northern side of the street. The rail facility enters the RAAP site where it terminates. On-street parking is permitted along the roadway and sidewalks are provided on the south side of the street.

i. **Van Dusen Avenue** is a two-lane east-west local street that connects Claus Road to Terminal Avenue. Residential uses front both sides of the side of the street, with some large lot residential homes. The eastern portion of the roadway is generally unimproved with no on-street parking permitted. On-street parking is permitted on the western portion of the roadway where small-lot residential homes have been developed. A new entrance to the RAAP is proposed to form the fourth leg of the intersection of Van Dusen Avenue with Claus Road.

j. **Minniear and Davis Avenues** are two-lane east-west local streets that connect Claus Road to Terminal Avenue. Large lot residential uses front both sides of the side of the street, which is generally unimproved with no on-street parking or pedestrian facilities. These streets intersect with Claus Road in the vicinity of the RAAP main entrance.

2. Plan Area Study Intersections

Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on intersections in the vicinity of the site during the morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00

p.m.) peak periods. The following intersections, as shown previously on Figure 4.16-1, were selected in consultation with City of Riverbank staff, based on the amount of traffic the project could add to each intersection, and in response to comments received on the notice of preparation (NOP) for the project.

1. Atchison Street (State Route 108)/1st Street
2. State Route 108/Claus Road
3. State Route 108/Patterson Road
4. Patterson Road/Claus Road
5. Townsend Avenue/Claus Road
6. Van Dusen Avenue/Claus Road
7. Minniear Avenue/Claus Road
8. RAAP Main Entrance/Claus Road
9. Davis Avenue/Claus Road
10. Claribel Road/Coffee Road
11. Claribel Road/Oakdale Road
12. Claribel Road/Roselle Avenue
13. Claribel Road/Claus Road
14. Claribel Road/McGee Avenue/Eleanor Avenue
15. Terminal Avenue/Santa Fe Avenue/Claus Road

3. Existing Rail Service

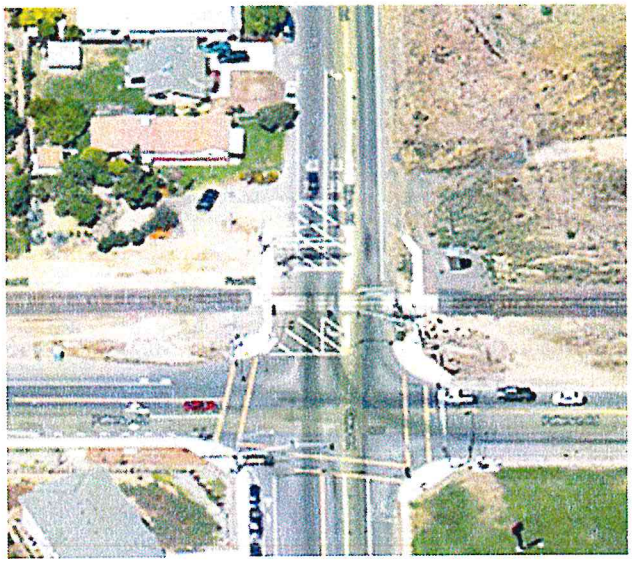
Amtrak and freight service is provided on rail facilities in the study area, with many at-grade railroad crossings in Riverbank. The intersections listed below and shown in Figure 4.16-2 are in the immediate study area.

1. Claus Road, north of Patterson Road
2. Claus Road, north of Townsend Avenue
3. Claus Road, south of Terminal Avenue
4. Claribel Road, west of Terminal Avenue

Accident data at the above crossings was obtained from the Department of Transportation, Federal Railroad Administration. The accident experience at each crossing is discussed below, with a general description of the crossing,

including the number of vehicular travel lanes, the range of train speeds over the crossing, and the typical number of trains per day.

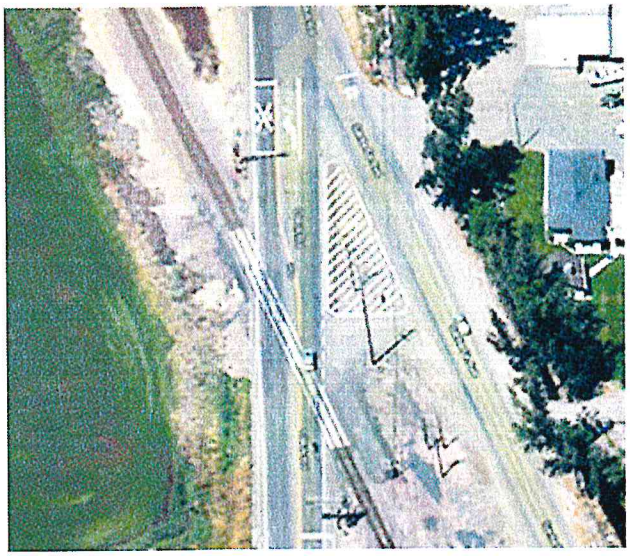
- **Claus Road, north of Patterson Road** – The Claus Road at Patterson Road crossing of the Sierra Northern Railway (SERA) railroad spur is a three-lane at-grade crossing, less than 75 feet north of the signalized Claus Road/Patterson Road intersection, as shown in Figure 4.16-2a. There are up to two trains per day with a typical train speed between 8 and 10 mph over the crossing. No passenger service is provided on this line. Gate arms, pavement markings, and warning bells are provided in addition to a median to prevent gate-arm run around. No incidents have been reported at this crossing. The stop bar for southbound vehicles at the intersection is located 35 feet north of the gate arms.
- **Claus Road, north of Townsend Avenue** – The Claus Road at Townsend Avenue crossing of the SERA railroad branch is a three-lane at-grade crossing, less than 75 feet north of the unsignalized Claus Road/ Townsend Avenue intersection, as shown in Figure 4.16-2b. There are up to four trains per day with a typical train speed between 20 and 25 mph over the crossing. No passenger service is provided on this line; the rail facility serves the RAAP. Gate arms, pavement markings, and warning bells are provided in addition to a partial median to discourage gate-arm run around. No incidents have been reported at this crossing.
- **Claus Road, south of Terminal Avenue** – The Claus Road crossing of the Burlington Northern Santa Fe (BNSF) railroad track is a two-lane at-grade crossing, as shown in Figure 4.16-2c. There are up to 46 trains per day with speeds from 1 to 79 mph. Gate arms, pavement markings, and warning bells are provided at the crossing. Amtrak service is provided on this rail track in addition to freight service. Two incidents have been reported at this crossing, one in 2002, and one in 2004. In the 2002 incident, a train collided with a vehicle stalled on the tracks. No injuries were reported. In the 2004 incident, a train collided with a vehicle traveling across the tracks. Three people were injured in this incident.



A



B



C



D

Source: Fehr & Peers, 2012.

FIGURE 4.16-2

RAILROAD CROSSINGS

- **Claribel Road, west of Terminal Avenue** – The Claribel Road crossing of the BNSF railroad track is a two-lane at-grade crossing, as shown in Figure 4.16-2d. There are up to 46 trains per day with speeds ranging from 1 to 79 mph. Gate arms, pavement markings, and warning bells are provided. Amtrak service is provided in addition to freight service. Six incidents have been reported at this crossing between 1989 and 2007. Most incidents involved a train striking a vehicle stalled on the track with limited injuries reported. The 2007 incident involved a passenger train striking a vehicle attempting to cross the tracks ahead of the train, killing 6 people inside the vehicle. Safety improvements were recently installed at this crossing including a pre-manufactured raised median with tubular delineators, new traffic signs, and pavement markings.

4. Existing Pedestrian and Bicycle Facilities

a. Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Sidewalks are provided in the developed areas of Riverbank, although none are currently provided along the project frontage. At signalized intersections in the developed area, pedestrian signals are also provided.

b. Bicycle Facilities

Typical bicycle facilities include the following:

- Bike paths (Class I) – Paved trails that are separated from roadways.
- Bike lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs.
- Bike routes (Class III) – Designated roadways for bicycle use by signs only; may or may not include additional pavement width for cyclists.

No bicycle facilities are currently provided in the vicinity of the RAAP site.

5. Existing Transit Service

Transit service in the area is provided by Riverbank Oakdale Transit Authority (ROTA) that arranges dial-a-ride service in Riverbank. Connections are provided to the regional transit system via Stanislaus Regional Transit

(StaRT) that connects Riverbank with Downtown Modesto and Oakdale. No scheduled service is currently provided to the site.

6. Existing Traffic Counts

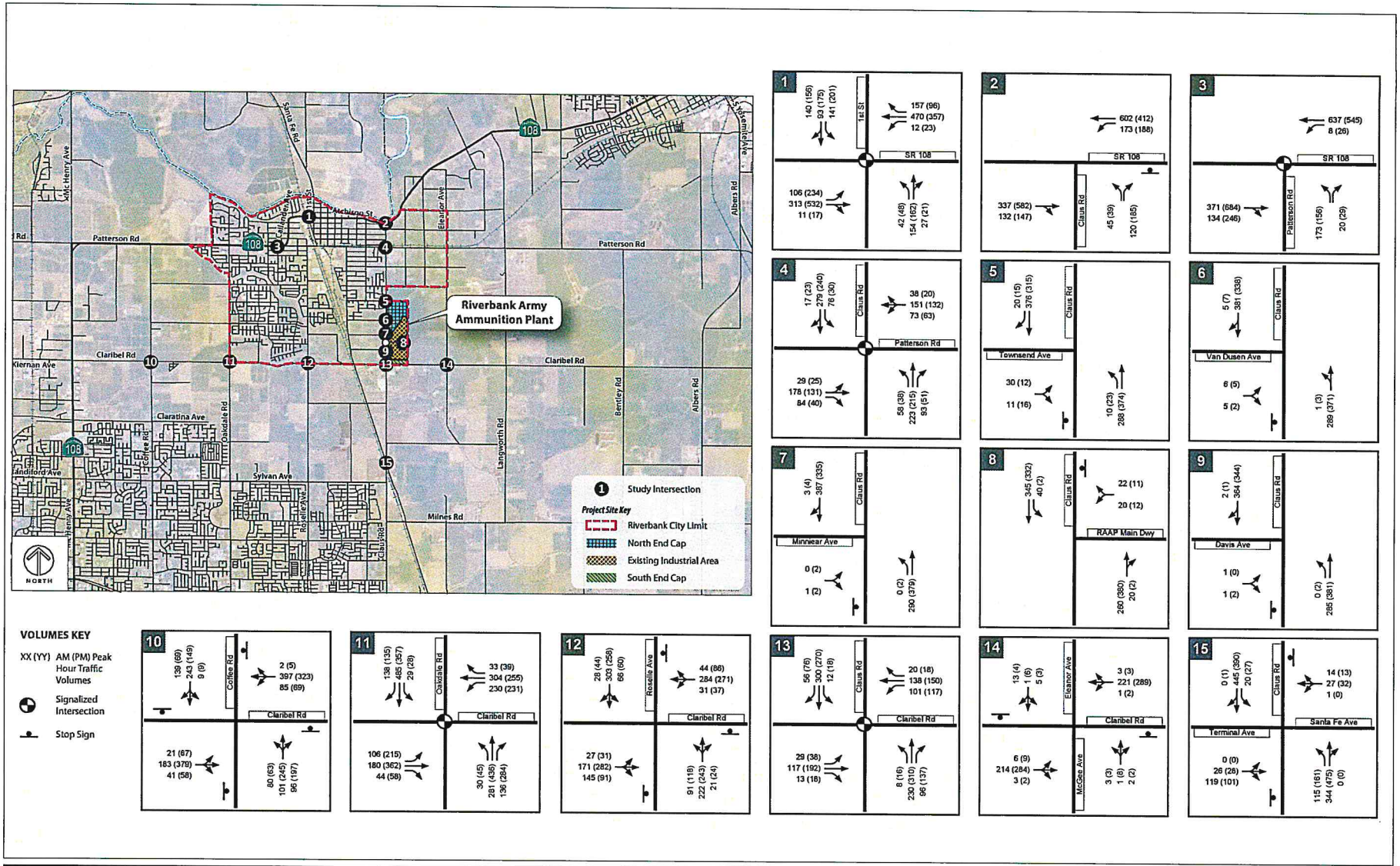
Weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period intersection turning movement counts were conducted at the study intersections and primary driveways that serve the site, including counts of pedestrians, bicyclists and trucks. 48-hour vehicle classification counts were also conducted on Claus Road adjacent to the site. For the study intersections and driveways, the single hour with the highest traffic volumes during the count periods was identified. The peak hour volumes are presented on Figure 4.16-3 along with the existing lane configuration and traffic control.

7. Intersection Levels of Service

The operations of roadway facilities are described with the term "level of service." Level of service is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (best operating conditions) to LOS F (worst operating conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

a. Signalized Intersections

Traffic conditions at signalized intersections were evaluated using the method developed by the Transportation Research Board (TRB), as documented in the 2000 Highway Capacity Manual (HCM). The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. These delay estimates are considered meaningful indicators of driver discomfort and frustration, fuel consumption and lost travel time. The relationship between average control delay and level of service for signalized intersections is summarized in Table 4.16-2.



Source: Fehr & Peers, 2012.

FIGURE 4.16-3

EXISTING (2011) LANE CONFIGURATIONS, TRAFFIC CONTROL AND PEAK HOUR VOLUMES

TABLE 4.16-2 **SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual, Transportation Research Board, 2000.

b. Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the Transportation Research Board's 2000 Highway Capacity Manual (HCM) method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. Table 4.16-3 summarizes the relationship between delay and level of service for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement and for the left-turn movement

TABLE 4.16-3 **UNSIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA**

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delays	< 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Highway Capacity Manual (Transportation Research Board, 2000).

from the major street. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.

8. Intersection Level of Service Standards

In Riverbank, acceptable operations at signalized intersections are defined as LOS D. Some intersections are located within unincorporated Stanislaus County, where LOS C is the threshold, unless that intersection is within the Sphere of Influence of a City. In these instances, the level of service standard of that jurisdiction may be considered. All study intersections except for Claribel Road/Coffee Road and Terminal Avenue/Santa Fe Avenue/Claus Road are either located within the City of Riverbank or its sphere of influence.

9. Existing Intersection Levels of Service

Existing intersection operations were evaluated for the weekday AM and PM peak hours at the study intersections and driveways, as summarized in Table 4.16-4. The analysis is based on the volumes, lane configurations, and traffic

TABLE 4.16-4 **EXISTING (2011) PEAK HOUR LEVEL OF SERVICE**

Location	Control[a]	Peak Hour	Delay (Seconds)[b]	LOS[c]
1. Atchison St. (SR 108)/1st St.	Signal	AM	39	D
		PM	46	D
2. SR 108/Claus Rd.	SSSC	AM	3 (15)	A (B)
		PM	4 (18)	A (C)
3. SR 108/Patterson Rd.	Signal	AM	15	B
		PM	16	B
4. Patterson Rd./Claus Rd.[4]	Signal	AM	38	D
		PM	28	C
5. Townsend Ave./Claus Rd.[4]	SSSC	AM	1 (15)	A (B)
		PM	1 (13)	A (B)
6. Van Dusen Ave./Claus Rd.	SSSC	AM	0 (13)	A (B)
		PM	0 (14)	A (B)
7. Minniear Ave./Claus Rd.	SSSC	AM	0 (11)	A (B)
		PM	0 (11)	A (B)
8. RAAP Main Entrance/ Claus Rd.	SSSC	AM	1 (11)	A (B)
		PM	1 (12)	A (B)
9. Davis Ave./Claus Rd.	SSSC	AM	0 (11)	A (B)
		PM	0 (11)	A (B)
10. Claribel Rd./Coffee Rd.	AWSC	AM	**94**	**F**
		PM	**118**	**F**
11. Claribel Rd./Oakdale Rd.	Signal	AM	39	D
		PM	41	D
12. Claribel Rd./Roselle Ave.	AWSC	AM	**97**	**F**
		PM	**108**	**F**
13. Claribel Rd./Claus Rd.	Signal	AM	24	C
		PM	28	C
14. Claribel Rd./ McGee Ave./Eleanor Ave.	SSSC	AM	1 (12)	A (B)
		PM	1 (14)	A (B)
15. Terminal Ave./ Santa Fe Ave./Claus Rd.[d]	SSSC	AM	5 (28)	A (D)
		PM	6 (44)	A (E)

[a] Signal = signalized intersection, SSSC = side street stop controlled intersection.
[b] Delay presented in seconds per vehicle; for side-street stop-controlled intersections, Delay presented in Intersection average (worst approach).
[c] LOS = Level of Service.
[d] Level of service is worse than shown here when a train is at the adjacent crossing.
Source: Fehr & Peers, 2012.

control shown on Figure 4.16-3. Observed peak hour factors[2] were used at all intersections for the existing analysis, in addition to the heavy vehicle percentages described below.

As shown, study intersections generally operate at acceptable service levels, except for the unsignalized intersections of Claribel Road/Coffee Road and Claribel Road/Roselle Avenue. Field observations confirmed the calculated levels of service. It should also be noted that the levels of service at intersections adjacent to rail crossings may be worse than shown during rail crossing activities.

10. Signal Warrants

To assess the need for signalization of stop-controlled intersections, the Manual of Uniform Traffic Control (MUTCD) (Federal Highway Administration 2009) presents eight signal warrants. The Peak Hour Volume Warrant and the Peak Hour Delay Warrant is used in this study as a supplemental analysis tool to assess operations at unsignalized intersections.[3] Based on this analysis,

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[2] The relationship between the peak 15-minute flow rate and the full hourly volume is given by the peak-hour factor (PHF) as shown in the following equation: PHF=Hourly volume/(4* volume during the peak 15 minutes of flow). The analysis of level of service is based on peak rates of flow occurring within the peak hour because substantial short-term fluctuations typically occur during an hour. Where the existing PHF is below 0.88, 0.88 was used.

[3] Unsignalized intersection warrant analysis is intended to examine the general correlation between existing conditions and the need to install new traffic signals. Existing peak-hour volumes are compared against a subset of the standard traffic signal warrants recommended in the MUTCD and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible State or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

the unsignalized intersections of Claribel Road/Coffee Road and Claribel Road/Roselle Avenue currently meet signal warrants in both the morning and afternoon peak hours. Traffic signals are planned to be constructed at the Claribel Road/Coffee Road intersection in 2012 and at the Claribel Road/Roselle Avenue intersection in 2015/2016.

11. Rail Crossing Operations

Observations of the Claus Road rail crossings at Townsend Avenue and Terminal Avenue indicate minimal activity of the Townsend crossing and regular use of the Terminal Avenue crossing. Observations conducted on May 24th and May 26th between 6:00 a.m. and 6:00 p.m., show that usage of the Townsend crossing is sporadic, with no rail activity observed on May 24th and two crossings on May 26th. Both crossings were of freight trains and the crossing devices (i.e. gate arms) were activated between 2 and 3 minutes. One crossing occurred during the AM peak hour, resulting in vehicle queues to form at the Claus Road/Townsend Avenue intersection, with 14 vehicles queued in the southbound direction, three vehicles queued in the northbound direction, and one vehicle in the eastbound direction.

Significantly more activity was noted at the Terminal Avenue crossing, with approximately 20 crossings each day between 6:00 a.m. and 6:00 p.m. on both days of observation. Scheduled passenger service occurs with 7 to 8 passenger trains per day during the observation period. The remaining crossings are from freight trains. Passenger trains resulted in the gate arms being activated between 30 seconds and 1 minute. Freight trains took longer to traverse the crossing, with the gate arms being activated between 44 seconds and almost 4 minutes. Observations of vehicle queues during the morning and evening peak hours are summarized in Table 4.16-5.

Longer vehicle queues form during the crossing of a freight train given that the train may be 100 cars long and travel at lower speeds than passenger trains. It is uncertain whether these operations would continue into the future, as rail freight operators do not release information regarding current or

TABLE 4.16-5 **CLAUS ROAD AT TERMINAL AVENUE PEAK PERIOD RAILROAD CROSSING VEHICLE QUEUES**

Day	Time of Arrival	Train Type	Length of Gate Operation	Maximum Observed Vehicle Queue
May 24, 2011	7:18 AM	Freight	2 minutes, 10 Seconds	13 Northbound 32 Southbound
May 24, 2011	8:29 AM	Passenger	52 Seconds	8 Northbound 5 Southbound
May 24, 2011	4:01 PM	Freight	1 minute, 48 Seconds	26 Northbound 25 Southbound
May 24, 2011	4:59 PM	Passenger	45 Seconds	19 Northbound 10 Southbound
May 26, 2011	7:59 AM	Passenger	35 Seconds	6 Northbound 3 Southbound
May 26, 2011	8:12 AM	Freight	1 minute, 35 Seconds	17 Northbound 14 Southbound
May 26, 2011	8:30 AM	Passenger	46 Seconds	5 Northbound 13 Southbound
May 26, 2011	5:10 PM	Passenger	49 Seconds	12 Northbound 23 Southbound
May 26, 2011	5:36 PM	Freight	3 minutes, 40 Seconds	25 Northbound 50 Southbound

Source: Quality Counts, May 2011.

future track usage, and the Amtrak schedule/service could be changed in the future.

C. Impact Analysis Methodology

The Project Description and Land Use Chapters of the DEIR present a detailed description of the Specific Plan as a whole, including land uses. This

section describes key transportation elements relevant to the transportation and traffic impact analysis.

1. Scenarios

For this study, the following scenarios were evaluated:

- *Existing* – Existing (2011) conditions based on recent traffic counts.
- *Existing Plus Project* – Existing (2011) conditions plus project-related traffic
- *Cumulative Without Project* – Future forecast conditions, which considers local and regional traffic growth. Roadway improvements consistent with the Tier 1 funded projects from the Stanislaus Council of Governments StanCOG RTP were assumed.
- *Cumulative With Project* – Future forecast conditions plus project-related traffic.

2. Trip Generation

Project trip generation estimates were developed using trip generation rates contained in the Institute of Transportation Engineers (ITE), Trip Generation, 8th Edition for the research and development, and retail portions of the project. Based on guidance from the ITE which recommends the use of locally collected trip generation, when available, the maximum trip generation rates from a survey of the existing RAAP uses and over 4.5 million square feet of industrial uses in the San Joaquin Valley were used to estimate the trip generating potential of RAAP development, as they are specific to the area and represent the trip generating potential from the variety of uses that could occupy the site. These rates have also been used in other environmental documents prepared for similar uses in the San Joaquin Valley. Additional details are provided in the TIA.

Peak hour and daily trip generation was calculated based on the method described above for the industrial land uses and based on ITE rates for the research/development, and retail portions of the project, as presented in Table 4.16-6. It is expected that the RAAP project would generate approximately

TABLE 4.16-6 **PROJECT TRIP GENERATION ESTIMATES**

			AM Peak Hour			PM Peak Hour			
Land Use	ITE Code	Units (SqFt)	In	Out	Total	In	Out	Total	Daily
Industrial	Passenger Vehicle Trips[a]	1,411,542	127	57	184	70	170	240	3,900
Industrial	Truck Trips[a]	1,411,542	28	42	70	42	28	70	930
	Total Industrial		155	99	254	112	198	310	4,830
R&D	760[b]	116,366	118	24	142	19	106	125	940
Retail	820[c]	119,058	73	46	119	218	226	444	5,110
Pass-By Trips[d]			0	0	0	-34	-34	-68	-770
Total Trips			*346*	*169*	*515*	*315*	*496*	*811*	*10,110*
Less Existing Uses[5]			-27	-8	-35	-8	-36	-44	-720
Potential Net New Trip Generation			*319*	*161*	*480*	*307*	*460*	*767*	*9,390*

[a] Trip generation based on documented trip generation rates for similar industrial facilities :
AM: T = 0.18 (X); Enter = 61%, Exit=39% (25% Trucks)
PM: T = 0.22(X); Enter = 36%, Exit = 64% (22% Trucks)
Daily: 3.42 (X) (19 % Trucks)
Where: T = trips generated, X = 1,000 square feet

[b] Trip generation based on Institute of Transportation Engineers (ITE), Trip Generation, (8th Edition) average rate for Research and Development Center (Land Use Code 760) :
AM: 1.22 (X); Enter = 83%, Exit=17%
PM: 1.07 (X); Enter = 15%, Exit = 85%
Daily: 8.11 (X)
Where: T = trips generated, X = 1,000 square feet

[c] Trip generation based on Institute of Transportation Engineers (ITE), Trip Generation, (8th Edition) average rate for Shopping Center (Land Use Code 820) :
AM: 1.0 (X); Enter = 61%, Exit=39%
PM: 3.73 (X); Enter = 49%, Exit = 51%
Daily: 42.92 (X)
Where: T = trips generated, X = 1,000 square feet

[d] Trip pass-by rate based on Institute of Transportation Engineers (ITE), Trip Generation Handbook average pass-by for Shopping Center (Land Use Code 820). Average Weekday pass-by rate: 15% during the PM peak hour. No pass-by rate assumed during the AM peak hour, a 15% pass-by rate assumed for daily trip total.

[e] Based on driveway counts conducted at the existing RAAP driveways.

Source: *Trip Generation* (8th Edition), ITE, 2008; *Trip Generation Manual*, ITE, 2004, and Fehr & Peers, 2012.

515 AM peak hour trips, 810 PM peak hour trips, and 10,110 daily trips. Not all of these trips would be new to the roadway system, as there are existing active uses on the site. Accounting for the actual trip generation of the existing uses on-site, approximately 480 new AM peak hour, 767 new PM peak hour and 9,390 new daily trips are expected to be generated by the site.

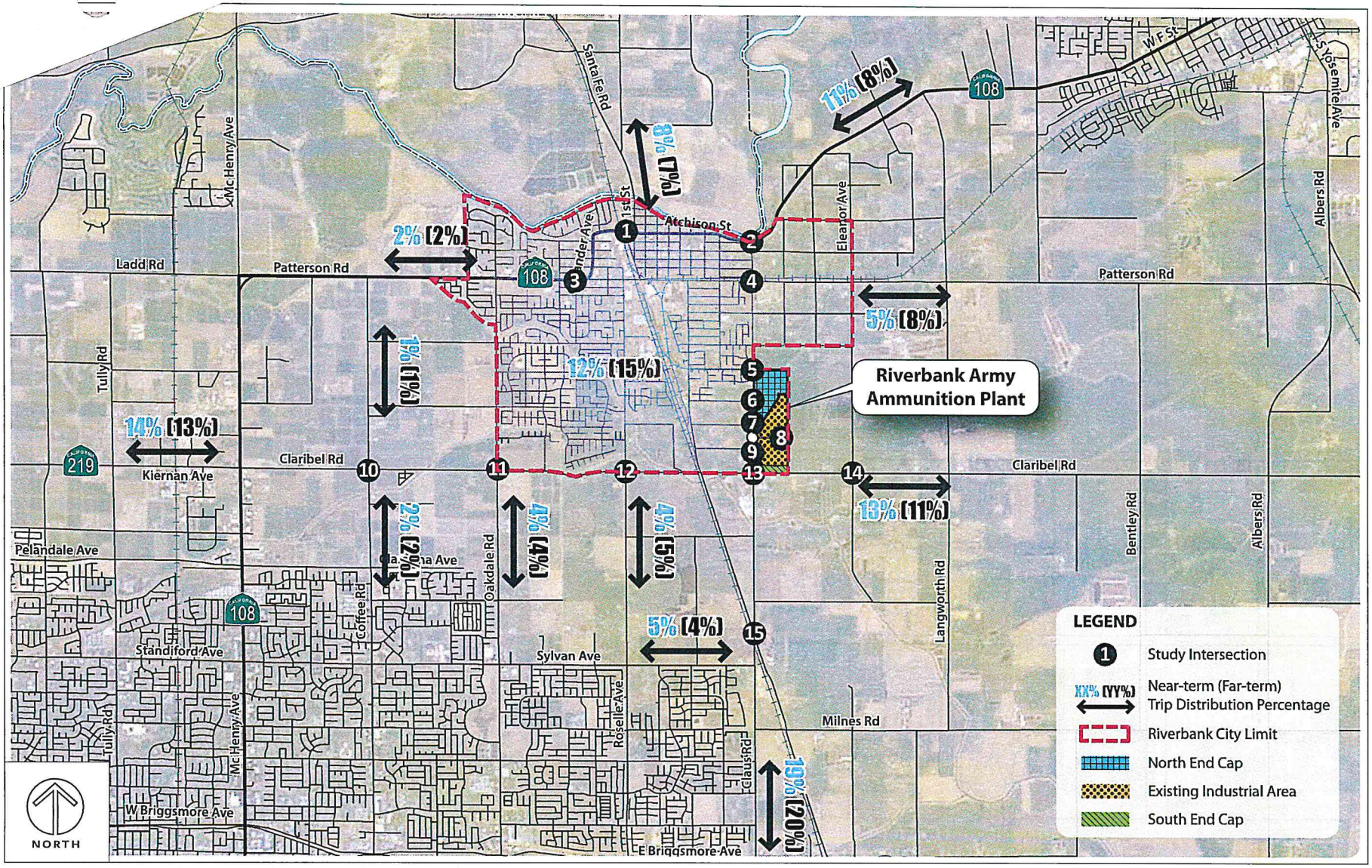
Separate trip generation estimates were calculated for vehicles and trucks, as trucks operate differently on the roadway system and need to be accounted for in the analysis. Based on the existing driveway counts at the RAAP and the Stockton data, peak hour driveway volumes are expected to consist of about 75 percent passenger vehicles and 25 percent trucks during the AM peak hour and 78 percent passenger vehicles and 22 percent trucks during the PM peak hour. To reflect the operational characteristics of large trucks, the appropriate heavy vehicle percentages were used in the intersection operations analysis.

3. Trip Distribution and Assignment

Based on the location of the site and surrounding land uses, existing and future levels of service, roadway volumes and intersection volumes (as documented in the General Plan EIR), and a select zone analysis using the StanCOG travel demand model (as modified for the North County Corridor [NCC] analysis), trip distribution percentages were developed as depicted on Figure 4.16-4. Due to the significant amount of growth and roadway network changes expected, separate trip distribution percentages were developed for the existing and far-term condition. The resulting Project Trip Assignment is shown on Figure 4.16-5 for the near-term and Figure 4.16-6 for the Cumulative condition.

D. Standards of Significance

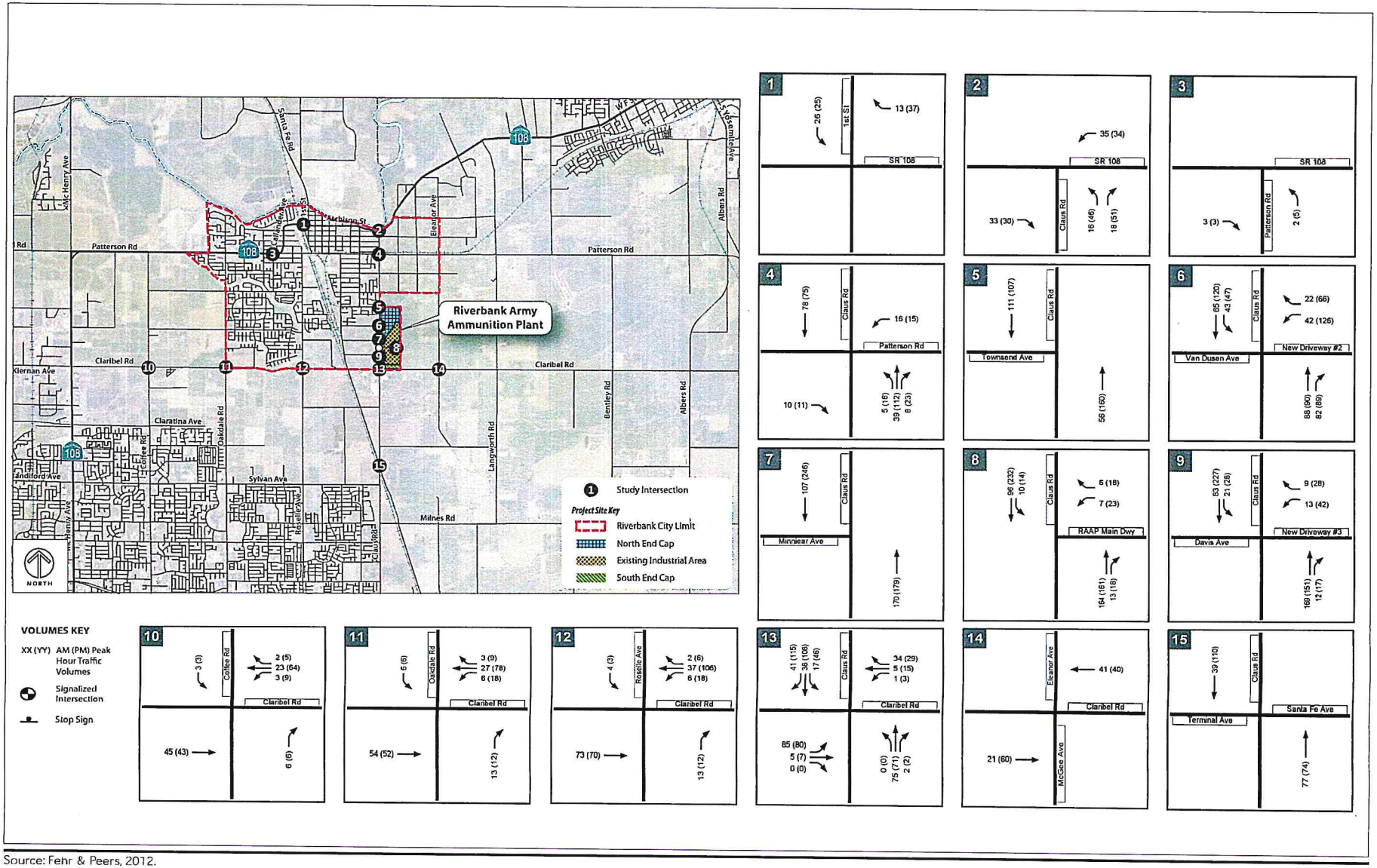
Based on standards of significance used in recently prepared environmental documents within Riverbank and CEQA guidelines, a significant traffic-related project impact would occur if:



Source: Fehr & Peers, 2012.

FIGURE 4.16-4

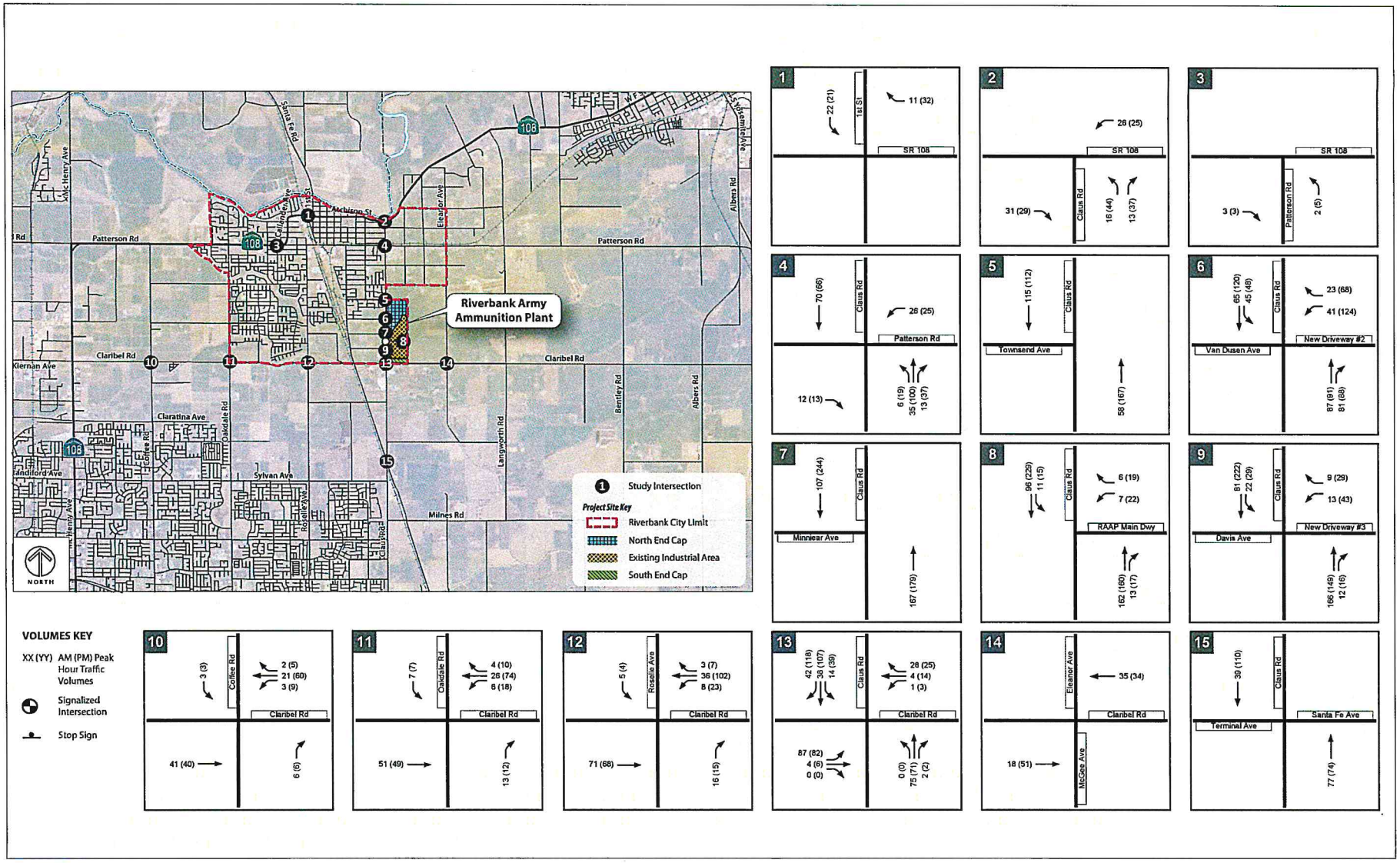
PROJECT TRIP DISTRIBUTION PERCENTAGES



Source: Fehr & Peers, 2012.

FIGURE 4.16-5

NEAR-TERM PROJECT TRIP ASSIGNMENT



Source: Fehr & Peers, 2012.

FIGURE 4.16-6

CUMULATIVE PROJECT TRIP ASSIGNMENT

- The addition of project traffic causes a signalized intersection to deteriorate from an acceptable level to an unacceptable level
- The addition of project traffic causes the level of service at an unsignalized intersection to degrade from an acceptable to an unacceptable service level or causes an unsignalized intersection to meet peak hour traffic signal warrants
- The project would increase traffic volumes at an intersection operating at an unacceptable level without the project
- The project substantially increases hazards or congestion due to a design feature (e.g. sharp curves) or incompatible uses (e.g., farm equipment)
- The project results in inadequate emergency access.
- The project conflicts with adopted transportation policies, plans, or programs.

E. Impacts Discussion

1. Project Impacts

This section evaluates potential off-site traffic impacts under Existing Plus Project conditions.

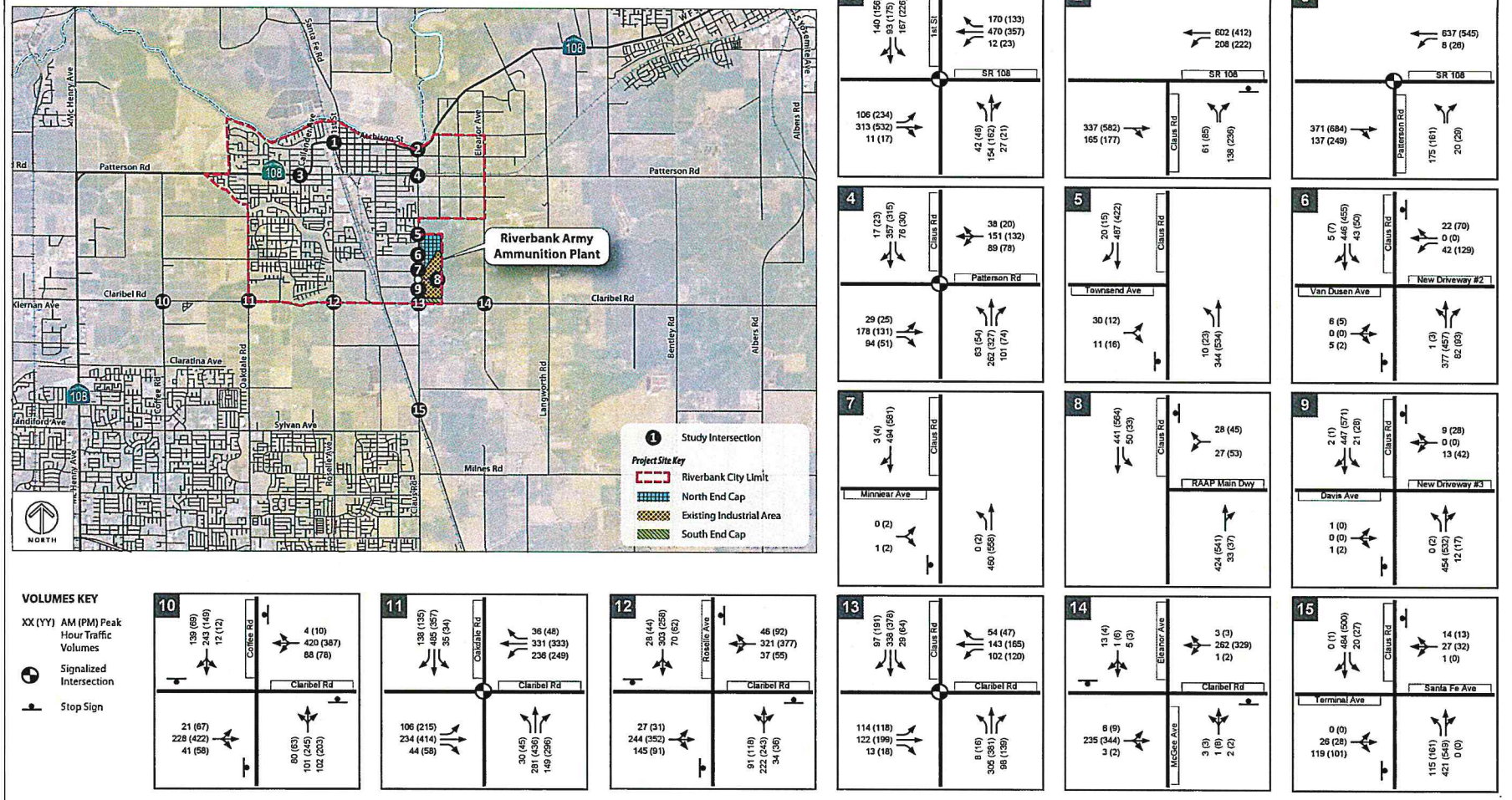
a. Existing Plus Project Traffic Volumes and Roadway Improvements

The project traffic volumes (Figure 4.16-5) were added to the existing peak hour traffic volumes (Figure 4.16-3) to estimate the Existing Plus Project peak hour traffic volumes, as shown on Figure 4.16-7. No roadway improvements were assumed over existing conditions, expect for new driveway connections to Claus and Claribel Roads that would be constructed as part of the project.

b. Analysis of Existing Plus Project Conditions

i. Intersection Levels of Service

The Existing Plus Project analysis results are presented in Table 4.16-7. The addition of project traffic would worsen already deficient operations at the



Source: Fehr & Peers, 2012.

FIGURE 4.16-7

EXISTING PLUS PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROL AND PEAK HOUR VOLUMES

TABLE 4.16-7 **EXISTING AND EXISTING PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control[a]	Peak Hour	Existing		Existing Plus Project	
			Delay[b]	LOS[c]	Delay[b]	LOS[c]
1. Atchison Street (SR 108)/ 1st Street	Signal	AM	39	D	40	D
		PM	46	D	46	D
2. SR 108/Claus Road	SSSC	AM	3 (15)	A (B)	4 (17)	A (C)
		PM	4 (18)	A (C)	6 (23)	A (C)
3. SR 108/Patterson Road	Signal	AM	15	B	15	B
		PM	16	B	16	B
4. Patterson Road/ Claus Road[d]	Signal	AM	38	D	41	D
		PM	28	C	31	C
5. Townsend Avenue/ Claus Road[d]	SSSC	AM	1 (15)	A (B)	1 (18)	A (C)
		PM	1 (13)	A (B)	1 (16)	A (C)
1. Van Dusen Avenue/ Claus Road	SSSC	AM	0 (13)	A (B)	2 (21)	A (C)
		PM	0 (14)	A (B)	9 (55)	A (F)
2. Minniear Avenue/ Claus Road	SSSC	AM	0 (11)	A (B)	0 (12)	A (B)
		PM	0 (11)	A (B)	0 (13)	A (B)
3. RAAP Main Entrance/ Claus Road	SSSC	AM	1 (11)	A (B)	1 (13)	A (B)
		PM	1 (12)	A (B)	1 (16)	A (C)
4. Davis Avenue/Claus Road	SSSC	AM	0 (11)	A (B)	1 (13)	A (B)
		PM	0 (11)	A (B)	1 (16)	A (C)
5. Claribel Road/Coffee Road	AWSC	AM	**94**	**F**	**116**	**F**
		PM	**118**	**F**	**151**	**F**
6. Claribel Road/ Oakdale Road	Signal	AM	39	D	42	D
		PM	41	D	45	D
7. Claribel Road/ Roselle Avenue	AWSC	AM	**97**	**F**	**131**	**F**
		PM	**108**	**F**	**176**	**F**
8. Claribel Road/Claus Road	Signal	AM	24	C	38	C
		PM	28	C	33	D
9. Claribel Road/McGee Avenue/Eleanor Avenue	SSSC	AM	1 (12)	A (B)	1 (13)	A (B)
		PM	1 (14)	A (B)	1 (16)	A (C)
10. Terminal Avenue/Santa Fe Avenue/Claus Road[d]	SSSC	AM	5 (28)	A (D)	5 (35)	A (E)
		PM	6 (44)	A (E)	7 (68)	A (F)

[a] Signal = signalized intersection, SSSC = side street stop controlled, AWSC = all way stop controlled

[b] Delay presented in seconds per vehicle; for side-street stop-controlled intersections, delay is presented as Intersection average (worst approach).

[c] LOS = Level of Service; bold indicates deficient service level. For intersections in italics, the standard is LOS C, for all other intersections the standard is LOS D.

[d] Level of service is worse than shown here when a train is at the adjacent crossing.

Source: Fehr & Peers, 2012.

Claribel Road/Coffee Road and Claribel Road/Roselle Avenue intersections, resulting in a *significant impact.* [MM TRANS-1 and MM TRANS-2] No other intersections would degrade beyond their level of service standard, which is LOS C for the intersections of Claribel Road/Coffee Road and Terminal Avenue/Santa Fe Avenue/Claus Road, and LOS D for the remaining intersections.

The project would increase traffic on State Route 108, where Surface Transportation Assistance Act (STAA) terminal access designation is desired to facilitate the movement of large trucks throughout the area. This would result in a *significant impact.* [MM TRANS-3]

ii. Signal Warrants

In the Existing Plus Project condition, the unsignalized intersections of Claribel Road/Coffee Road and Claribel Road/Roselle Avenue would continue to meet signal warrants in both the morning and afternoon peak hours. Signal warrants would not be satisfied at any other study intersections with the addition of project traffic.

iii. Railroad Crossing Operations

As discussed in the previous section, future train operations on the tracks in the study area of the project site are unknown. Assuming train operations continue as they are today, the increased traffic generated by the project could lengthen the level of vehicle queues, especially at the Claus Road/Terminal Avenue crossing. The project is expected to add approximately 116 morning peak hour trips and 184 evening peak hour trips to the Claus Road rail crossing at Terminal Avenue. Approximately 167 morning peak hour trips and 269 evening peak hour trips would be added over the Claus Road crossing at Townsend Avenue. With these volume increases, vehicle queues during railcar crossings are expected to increase. However, vehicle queues are anticipated to disperse quickly and sufficient distance is provided between intersections on Claus Road that vehicle queues would not affect the operation of upstream or downstream intersections. Additionally, the crossings are equipped with warning devices and other deterrents to keep drivers from

driving around the gate arms. Therefore, the project impact to rail crossings is expected to be *less-than-significant.*

iv. Construction Period

Construction of the proposed project could potentially result in disruption of traffic flows, blocking lanes in area roadways, and contributing to decreased level of traffic in fewer lanes. Traffic impacts during project construction can also include disruption of alternative modes of transportation, such as blocking bicycle or pedestrian pathways or public transit lanes on area roadways. Additional impacts may result during the construction phase of the proposed project, when there are heavy-duty construction vehicles sharing the roadway with normal vehicle traffic. This can create impacts due to incompatible uses and hazards. Impacts resulting to transportation and traffic due to project construction would be considered a *significant impact.* [MM TRANS-4]

2. Cumulative Impacts

This section discusses Cumulative traffic conditions both without and with the project. The future traffic conditions analysis considers the build out of the project as well as new development and roadway improvements in the surrounding areas.

a. Cumulative Roadway Assumptions

There are a number of roadway improvements that have been identified for construction in northern Stanislaus County to support the transportation needs of existing and planned development. Roadway network improvements consistent with Tier 1 projects identified in the StanCOG Regional Transportation Plan were assumed to be in place for the analysis of cumulative conditions. Tier 1 projects are those where funding sources have been identified. Major roadway improvements assumed in the study area include Phase 1 of the NCC project, which would construct an expressway between McHenry Avenue east to State Route 120 east of Oakdale. Phase 2 of the NCC project would connect McHenry Avenue to State Route 99. The facility is planned to improve regional circulation, relieve existing traffic congestion, reduce traffic delay, and accommodate future traffic. It is anticipated

that the facility would be a multi-lane, access-controlled expressway/freeway, with interchanges. At-grade intersections would be limited and grade-separation would be provided of railroad crossings, irrigation district canals, frontage roads, and local streets.

The NCC alignment considered in this analysis is consistent with the alignment identified in the *State Route 108 East Route Adoption* project as of the time this analysis was conducted. However, the ultimate alignment is still under evaluation and a preferred route has not yet been adopted. One alignment currently under consideration would construct the NCC along Claribel Avenue, which could have site access and circulation implications from Claus and Claribel Roads. Once the preferred alignment is selected, the Specific Plan and associated technical documents may need to be modified to reflect site access and circulation changes necessary to accommodate the roadway construction.

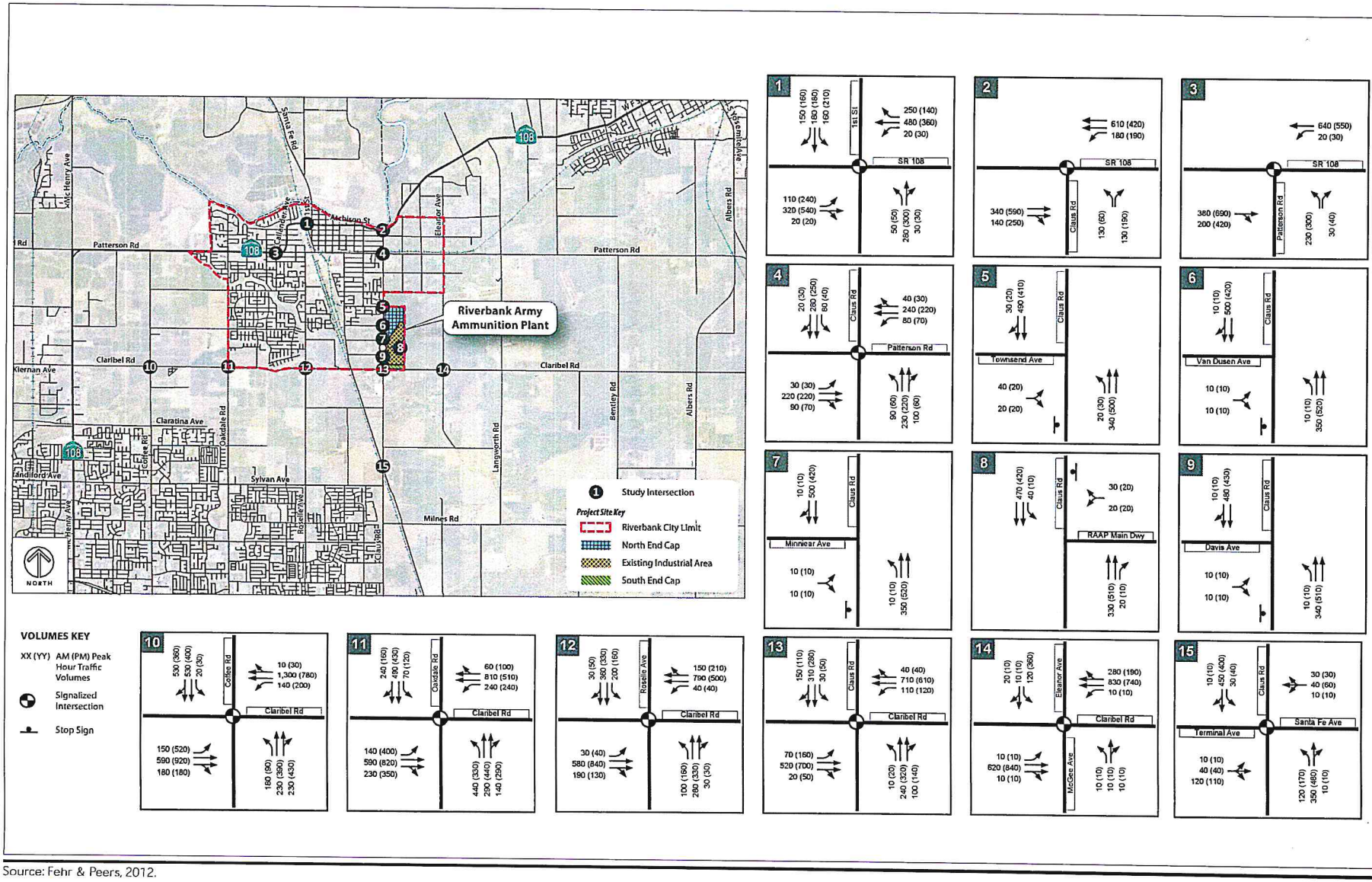
The City of Riverbank General Plan identifies additional roadway network improvements to be constructed with planned land use development, including widening of Coffee Road, Oakdale Road, Roselle Avenue, Claus Road, and Claribel Road to provide two travel lanes in each direction. Traffic signals are planned to be constructed at the following intersections:

- State Route 108/Claus Road
- Claribel Road/Coffee Road
- Claribel Road/Roselle Avenue
- Claribel Road/McGee Avenue/Eleanor Avenue
- Terminal Avenue/Santa Fe Avenue/Claus Road

The lane configuration assumptions for the study intersections are shown on Figure 4.16-8.

b. Cumulative Traffic Forecasts

The 2011 StanCOG RTP Model (StanCOG Model) was selected as the modeling tool for this project. The StanCOG Model was developed in the Cube/TP+ software platform. An extensive sub-area calibration/validation



Source: Fehr & Peers, 2012.

FIGURE 4.16-8

CUMULATIVE WITHOUT PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROL AND PEAK HOUR VOLUMES

exercise was undertaken before using the model to predict future volumes. The detailed results of this process are presented in the memorandum entitled Final Travel Demand Forecasting (TDF) Model Calibration and Validation for the North County Corridor PA/ED (March 16, 2011). Buildout of the land uses identified in City of Riverbank General Plan is reflected in the resulting traffic forecasts.

The process of developing forecasts is described in detail in the TIA. The Cumulative Without Project Forecasts are presented on Figure 4.16-8. The peak hour project volumes from Figure 4.16-6 were added to the Cumulative Without Project traffic volumes to determine cumulative traffic volumes with the proposed project, as presented on Figure 4.16-9.

c. Analysis of Cumulative Conditions

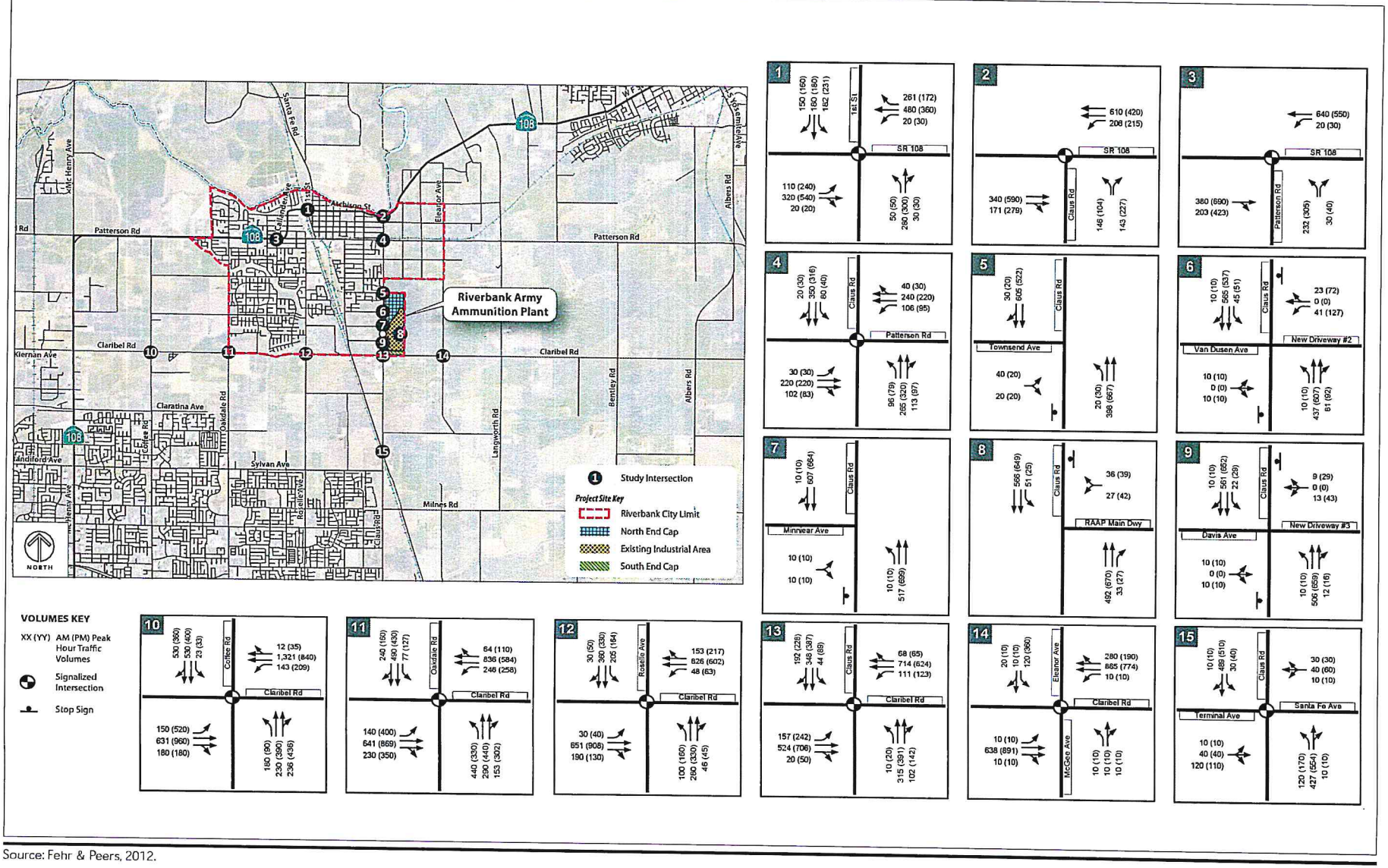
i. Intersection Levels of Service

The Cumulative Without and With Project conditions analysis results are presented in Table 4.16-8. In the Cumulative Without Project condition, the Claribel Road/Coffee Road and Claribel Road/Oakdale Road intersections are projected to operate at unacceptable service levels during both peak hours. The addition of project traffic would potentially increase delay at these intersections, resulting in a significant impact at each intersection. [MM TRANS-5 and MM TRANS-6]

It should be noted that the timing of the conditions shown in Table 4.16-9 is uncertain, as it is dependent on the level of local and regional development that could occur over the next 20 years.

ii. Signal Warrants

A number of intersections that are currently unsignalized are planned to be signalized by 2030. Peak hour signal warrants would not be satisfied at any unsignalized study intersection in the Cumulative condition, even with the addition of project traffic.



Source: Fehr & Peers, 2012.

FIGURE 4.16-9

CUMULATIVE WITH PROJECT LANE CONFIGURATIONS, TRAFFIC CONTROL AND PEAK HOUR VOLUMES

TABLE 4.16-8 **CUMULATIVE WITHOUT AND WITH PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE**

Intersection	Control[a]	Peak Hour	Without Project		With Project	
			Delay[b]	LOS[c]	Delay[b]	LOS[c]
1. Atchison Street (SR 108) /1st Street	Signal	AM	43	D	44	D
		PM	48	D	50	D
2. SR 108/Claus Road	Signal	AM	11	B	11	B
		PM	12	B	14	B
3. SR 108/Patterson Road	Signal	AM	18	B	18	B
		PM	34	C	36	D
4. Patterson Road/ Claus Road[d]	Signal	AM	27	C	28	C
		PM	24	C	26	C
5. Townsend Avenue/ Claus Road[d]	SSSC	AM	1 (16)	A (C)	1 (18)	A (B)
		PM	1 (14)	A (B)	1 (17)	A (B)
6. Van Dusen Avenue/ Claus Road	SSSC	AM	0 (15)	A (B)	2 (21)	A (C)
		PM	0 (15)	A (B)	11 (74)	B (F)
7. Minniear Avenue/ Claus Road	SSSC	AM	0 (11)	A (B)	0 (12)	A (B)
		PM	0 (11)	A (B)	0 (13)	A (B)
8. RAAP Main Entrance/ Claus Road	SSSC	AM	1 (11)	A (B)	1 (12)	A (B)
		PM	1 (12)	A (B)	1 (14)	A (B)
9. Davis Avenue/Claus Road	SSSC	AM	0 (11)	A (B)	1 (12)	A (B)
		PM	0 (11)	A (B)	1 (14)	A (B)
10. Claribel Road/ Coffee Road	Signal	AM	87	F	89	F
		PM	65	E	73	E
11. Claribel Road/ Oakdale Road	Signal	AM	99	F	110	F
		PM	91	F	99	F
12. Claribel Road/ Roselle Avenue	Signal	AM	33	C	34	C
		PM	32	C	33	C
13. Claribel Road/Claus Road	Signal	AM	28	C	33	C
		PM	34	C	40	D
14. Claribel Road/McGee Avenue/Eleanor Avenue	Signal	AM	20	B	20	B
		PM	28	C	28	C
15. Terminal Avenue/Santa Fe Avenue/Claus Road[d]	Signal	AM	29	C	29	C
		PM	29	C	33	C

[a] Signal = signalized intersection, SSSC = side street stop controlled intersection

[b] Delay presented in seconds per vehicle; for side-street stop-controlled intersections, Delay presented in Intersection average (worst approach).

[c] LOS = Level of Service; bold indicates deficient service level. For intersections in italics, the standard is LOS C, for all other intersections the standard is LOS D.

[d] Level of service is worse than shown here when a train is at the adjacent crossing.

Source: Fehr & Peers, 2012.

iii. Railroad Crossing Operations

The potential project impact to rail crossings was considered less-than-significant in the near-term condition. In the Cumulative condition, there are a number of roadway improvements planned in the area to accommodate existing and projected levels of vehicle traffic. Rail traffic patterns may change as well. For example, Tuolumne County approved a quarry project (currently the subject of litigation), that could increase rail activity on the Claus Road, north of Patterson Road crossing by up to 20 trains per week, more than doubling the number of trains over the crossing each week. It is expected that as roadways are improved and widened, grade separated crossings may be constructed at existing at-grade crossings, including with the NCC project. As the RAAP is developed, it is expected that through the payment of regional and local traffic impact fees, the project would contribute to future rail crossing improvements.

F. Impacts And Mitigation Measures

1. Project Impacts

Based on the level of service results, impacts could potentially occur at two study intersections. Mitigations to address these impacts are discussed below.

Impact TRANS-1: The Claribel Road/Coffee Road intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.

Mitigation Measure TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stanislaus County plans to signalize this intersection as part of the Claribel Road widening project. Fund-

ing for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.

Significance After Mitigation: *Less than significant.*

Impact TRANS-2: The Claribel Road/Roselle Avenue intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.

Mitigation Measure TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.

Significance After Mitigation: *Less than significant.*

Impact TRANS-3: Future development within the RAAP area would add truck traffic to intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road. As these intersections do not currently accommodate the turning movements of large trucks, this is considered a potentially significant impact based on the significance criteria.

TABLE 4.16-9 **EXISTING PLUS PROJECT WITH MITIGATION PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY**

Intersection	Peak Hour	Existing		Existing Plus Project		Existing Plus Project Plus Mitigation	
		Delay[a]	LOS[b]	Delay[a]	LOS[b]	Delay[a]	LOS[b]
10. Claribel Road/ Coffee Road	AM	94	F	120	F	35	C
	PM	118	F	151	F	15	B
12. Claribel Road/ Roselle Avenue	AM	88	F	131	F	33	C
	PM	108	F	176	F	36	D

[a] Delay presented in seconds per vehicle.
[b] LOS = Level of Service.
Source: Fehr & Peers, 2012.

Mitigation Measure TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements at the intersections identified above, though the payment of local and regional traffic fees, that improve turning radii for large trucks. No improvements have been identified for these intersections.

Significance After Mitigation: *Significant and unavoidable.*

Impact TRANS-4: Future Development in the RAAP Specific Plan area could substantially increase hazards due to a design feature or incompatible uses.

Mitigation Measure TRANS-4: Although construction impacts are expected to be temporary and less-than-significant, for all future development in the plan area, the following is recommended to minimize the effects of construction related activity:

- Prepare a construction management plan, including:
  - Project staging plan to maximize on-site storage of materials and equipment.

- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes.
- Permitted construction hours.
- Location of construction staging.
- Provision of on-site parking for all construction employees, site visitors, and inspectors.
- Provisions for street sweeping to remove construction related debris on public streets.

Significance After Mitigation: *Less than significant.*

2. Cumulative Impacts

Based on the level of service results, impacts could potentially occur at two study intersections. Mitigations to address these impacts are discussed below. It should be noted that the future project developers would be required to pay all applicable local and regional transportation impact fees in place at the time of development to fund construction of local and regional roadway improvements.

Impact TRANS-5: The Claribel Road/Coffee Road intersection is projected to operate at LOS F during the AM and LOS E during the PM peak hours. The addition of project traffic would worsen deficient operations in both peak hours. This is considered significant based on the significance criteria, as LOS C is the standard for this intersection.

Mitigation Measure TRANS-5: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS C would be achieved. Alternatively, intersection improvements beyond the cross-section identified in the General Plan could be provided to improve

peak hour operations, such as dual left-turn lanes and right-turn only lanes on all approaches. This improvement would improve the service level to LOS E during the AM peak hour and LOS D during the PM peak hour, as shown on Table 4.16-10. These service levels are considered deficient for this intersection. Given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.

Significance After Mitigation: *Significant and unavoidable.*

Impact TRANS-6: The Claribel Road/Oakdale Road intersection is projected to operate at LOS F during the AM and PM peak hours. The addition of project traffic would worsen LOS F operations. This is considered significant based on the significance criteria, as LOS D is the standard for this intersection.

Mitigation Measure TRANS-6: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS D would be achieved. Alternatively, construction of additional improvements at this intersection that would result in acceptable service levels, including dual left-turn pockets on the northbound, westbound, and eastbound approaches could be constructed. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown in Table 10 of the TIA, reducing this impact to a less-than-significant level. However, given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.

Significance After Mitigation: *Significant and unavoidable.*

TABLE 4.16-10 **CUMULATIVE WITH PROJECT WITH MITIGATION PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY**

Intersection	Peak Hour	Cumulative Without Project Delay[a]	Cumulative Without Project LOS[b]	Cumulative With Project Delay[a]	Cumulative With Project LOS[b]	Cumulative With Project With Mitigation Delay[a]	Cumulative With Project With Mitigation LOS[c]
Claribel Road/	AM	87	F	89	F	66	E
Coffee Road	PM	65	E	73	E	38	D
Claribel Road/	AM	99	F	110	F	53	D
Oakdale Road	PM	91	F	99	F	51	D

[a] Delay presented in seconds per vehicle; for side-street stop-controlled intersections, Delay presented in Intersection average (worst approach).
[b] LOS = Level of Service.
Source: Fehr & Peers, 2012.

4.17 UTILITIES AND SERVICE SYSTEMS

This chapter describes the existing utilities and services systems on the RAAP site and evaluates the potential impacts of the Plan on those services and facilities. Wastewater, water supply, stormwater, and solid waste are each addressed in a separate section of this chapter. In each section, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of project-specific and cumulative impacts.

A. Wastewater

1. Regulatory Framework

a. Federal Regulations

The federal government has some regulations regarding wastewater treatment and planning. The federal regulation relevant to the RAAP is described below.

i. Clean Water Act

The Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), regulates the discharge of pollutants into watersheds throughout the nation. Under the CWA, the United States Environmental Protection Agency (EPA) implements pollution control programs and sets wastewater standards.

ii. National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

b. State Regulations and Agencies

Wastewater treatment and planning is regulated at the State level. Specific regulations relevant to the proposed Plan are described below.

i. State Water Resources Control Board

On May 2, 2006 the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than 1 mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSOs) by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system, to prevent sanitary sewer waste from entering the storm sewer system, and to develop a Sewer System Management Plan (SSMP). The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system.

The Central Valley Regional Water Quality Control Board (CVRWQCB) is the local division of the SWRCB. The CVRWQCB issues NPDES permits in Riverbank. NPDES permits allow the RWQCB to collect information on where the waste is disposed, what type of waste is being disposed, and what entity is depositing the wastes. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance. The current California RWQCB requirements for the Riverbank WWTP state that the monthly average influent flow of the City of Riverbank Waste Water Treatment Plant (City WWTP) must not exceed 4.5 million gallons per day (mgd) during the three-month tomato-processing season and 1.8 mgd during the remainder of the year.[1]

[1] City of Riverbank, General Plan Background Report, 2005, Public Services and Facilities, page PS&F-29.

c. Local Regulations

Locally, wastewater treatment and planning is regulated at the city level, as described below.

i. City of Riverbank 2007 Sewer Collection System Master Plan

The City has projected wastewater flows for future development in Riverbank based on land uses projected in its General Plan and has identified facility improvements required to maintain service at or above the required level in the 2007 Sewer Collection System Master Plan (Sewer Master Plan). The wastewater generation factors vary ranging from 400 gpd per acre to 2,500 gpd per acre based on land uses, as shown in Table 4.17-1. According to the Sewer Master Plan, the existing sewer flows within the City limits are 1,861,000 gpd, but the future sewer flows within the City limits and the General Plan area would increase up to 6,635,000 gpd at buildout. Improvements are prioritized and phased in the Capital Improvement Plan, which is part of the Sewer Master Plan.

ii. City of Riverbank General Plan

Goals and policies from the Riverbank General Plan that are relevant to wastewater are listed in Table 4.17-2.

iii. Industrial Discharge Permits

Industrial dischargers to the City treatment plant operate under individual industrial discharge permits issued annually by the City. The industrial discharge permits specify flow and quality limits for wastewater discharge to the City treatment plant. The existing RAAP industrial permit required an optimization study for an ion exchange unit, the results of which reflected their ability to reduce total dissolved solids (TDS) concentrations discharged to the City treatment plant. Decreases to TDS loading were subsequently agreed upon between the City and RAAP and reflected in new permit limits.[2]

[2] Weston Solutions, Environmental Opportunities and Constraints Analysis Riverbank Army Ammunitions Plant Riverbank, California, November 2009. See Appendix F of this Draft EIR.

TABLE 4.17-1 **FUTURE SEWER FLOW PROJECTIONS FOR THE GENERAL PLAN AREAS AND THE CITY SERVICE AREAS**

Land Use	Gross Area (Acres)	Generation Factor (gpd/Acre)	Average Dry Weather Flow (gpd)
Within City Service Areas			
Medium Density Residential	1,558	2,500	2,501,000
Low Density Residential	148	1,500	178,000
Commercial	219	1,200	198,000
Industrial	244	1,500	227,000
Government	80	425	29,000
Parks	69	400	22,000
Total			**3,155,000**
Sewer Flow for General Plan Areas including the City			
Total			**6,635,000**

Source: City of Riverbank, 2007 Sewer Collection System Master Plan, page 4-5.

iv. System Development Fees

The City of Riverbank established public facility impact fees (also known as System Development Fees) by Resolution in order to make reasonable provisions for new facilities. As required by the City's General Plan, new development should provide for adequate public facilities and new development would bear the fair share of providing such facilities. Such fees may include charges for drainage improvements, traffic and roadway improvements, and other capital improvements such as parks and public buildings. The City Council approved increases to the City's development impact fees in 2008.

TABLE 4.17-2 **GENERAL PLAN GOALS AND POLICIES RELEVANT TO WASTEWATER**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.4	The City shall give priority to serving areas within the existing City limits as of the adoption of this General Plan based on current infrastructure and service capacity. New growth proposed outside existing City limits is responsible for providing, or paying a proportionate share of the cost of, public facilities and infrastructure adequate to serve the needs of such development according to the General Plan, a specific plan (if prepared for such development), and/or any infrastructure Master Plan that covers such development through the use of a City-approved development agreement. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area.

TABLE 4.17-2 **GENERAL PLAN GOALS AND POLICIES RELEVANT TO WASTEWATER** (CONTINUED)

Goal/Policy Number	Goal/Policy Content
	The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Goal PUBLIC-3	**Adequate wastewater service to meet existing and future projected development determined in the general plan.**
Policy PUBLIC-3.1	The City will require that wastewater collection, conveyance, and treatment facilities meet or exceed local, State, and federal standards, as addressed in the City's Sewer Collection System Master Plan.

Source: City of Riverbank, 2006, General Plan 2005-2025.

v. Sewer Service Charge

The major source of revenue for the Sewer fund is Sewer Service Charges. These are the charges made to residential and commercial customers on a bi-monthly basis. These charges are used to maintain the City's sewer lines and to fund the operations of the City WWTP.

2. Existing Conditions

Prior to 1975, sanitary sewer waste was collected and treated on the RAAP site. The effluent and sewage beds remain intact, but were closed in 1975 when connection with the City of Riverbank's system was made. The Public Work Sewer Division of the City operates and maintains the City's sewer collection system including sewer mains, laterals, lift stations, and the City WWTP.

a. Wastewater (Sewer) Collection

As mentioned above, the Public Work Sewer Division maintains the wastewater collection system in Riverbank, including the RAAP site. The City sewer system consists of 6-inch to 36-inch diameter collection piping, nine lift/pump stations, and the City WWTP, located on the north side of the Stanislaus River in San Joaquin County. All wastewater is conveyed from the

collection system to the City WWTP through a 27-inch gravity line located on a trestle over the Stanislaus River.[3]

The sanitary sewer system on the RAAP site conveys waste to the City of Riverbank. The sanitary sewer collection system begins as a series of 6-inch pipes in the Production Area. These pipes drain to the north by gravity feed and become progressively larger as waste from Buildings 9, 10, 13, 16, 17, and the 120 area are added. Ultimately, one 12-inch diameter pipe conveys waste to the lift station north of Building 9 and across the railroad tracks from the propane storage area. From the lift station, waste is transferred by a 4-inch diameter force main before transitioning back to gravity flow and connecting to the City of Riverbank collection system. There is an additional lift station near the Industrial Wastewater Treatment Plant (IWTP). The total length of the gravity sanitary sewer system on the RAAP site is approximately 6,078 linear feet.[4]

The sanitary sewer system on the RAAP site is built mostly of reinforced concrete pipe with some small sections of cement asbestos and corrugated metal pipe. There are over 55 manholes and clean-out locations. Due to the age of the concrete pipe, there are many areas with vertical and/or horizontal pipe cracks. Based on a camera assessment performed by Weston Solutions during the week of September 20, 2009, the severity of the cracks range from minor superficial cracking to at least one section of collapsed pipe.[5] Additionally, there are pipe segments of both vertical crowns and valleys, meaning the gravity system cannot function properly, as material will settle in these

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[3] City of Riverbank, *2007 Sewer Collection System Master Plan.*

[4] Weston Solutions, 2010, *Operations and Infrastructure Assessment – Riverbank Army Ammunition Plant,* July 1. See Appendix F of this Draft EIR.

[5] Weston Solutions, 2009, *Environmental Opportunities and Constraints Analysis Riverbank Army Ammunitions Plant Riverbank,* November. See Appendix F of this Draft EIR.

areas. Many instances of cracked or offset joints were also noted during the camera inspection of the sewer lines.[6]

b. Wastewater (Sewer) Treatment and Disposal

There are three main generators of wastewater on the RAAP site: a Groundwater Treatment System (GWTS), an IWTP, and domestic wastewater. The GWTP is the remediation project that pumps out water, treats it, and sends it to the IWTP where it is pumped to the Stanislaus River. The IWTP handles all the wastewater from metal production. It treats the waste with two types of chemicals. This process creates a brine water from the treatment facility much like a water softener. Both that water and the treated effluent are discharged into the City system. Consequently, there are two types of discharge water coming from the IWTP and going into the City system: the ion exchange brine water and the treated effluent. The domestic wastewater is comingled with the IWTP wastewater and then goes into a single pipe to be discharged to the City sewer system.

All RAAP wastewater except the effluence from the GWTP is discharged to the City of Riverbank collection system and treated at the City WWTP. Treated wastewater is discharged, under a NPDES Direct Discharge permit, into the Stanislaus River. The City WWTP went through a five-year upgrade program from 2002 to 2007 that allowed an increase in industrial treatment capacity. The City WWTP has a peak capacity of 7.9 million gallons per day (mgd).[7] The existing average dry-weather flows within the City limits are 1,861,000 gpd (or 1.86 mgd).[8]

The treated industrial discharge from the RAAP site was permitted for discharge to the Stanislaus River through the waste discharge requirements (WDRs) issued by the State Water Resources Board (SWRB) and the

[6] Weston Solutions, 2009, *Environmental Opportunities and Constraints Analysis Riverbank Army Ammunitions Plant Riverbank,* November. See Appendix F of this Draft EIR.

[7] City of Riverbank, *General Plan Draft EIR,* page 4.16-10, adopted in 2009.

[8] City of Riverbank, 2007, *2007 Sewer Collection System Master Plan.*

CVRWQCB.[9] The industrial discharge used to be permitted for discharge to the City sewer treatment system through an industrial wastewater permit held by Norris Industries (NI) until 2010.[10]

3. Standards of Significance

The Plan would have a significant impact related to wastewater if it would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

4. Impacts Discussion

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

As described in Section A.1 of this chapter, sanitary wastewater treatment requirements are established in the NPDES Permit issued by the RWQCB. The permit also sets out a framework for compliance and enforcement.

Currently the discharger named in the WDR is NI, but the WDRs are transferable if there is a name change only and the timing is not nearing the normal re-permitting time. When the WDR is transferred to the City of Riverbank, the City will implement and enforce a pretreatment program for effluent discharged from the GWTS and the IWTS on the RAAP site.

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[9] State of California Regional Water Quality Control Board (RWQCB) Waste Discharge Requirements (WDR) Order No. 5-01-200, 2001.

[10] City of Riverbank Industrial Wastewater Discharge Permit 08-001, 2008.

Additionally, the City of Riverbank has a permit for discharge from the City WWTP to the Stanislaus River. The City proposed wastewater treatment system upgrade through the 2007 Sewer Collection System Master Plan, and the upgrade is expected to comply with RWQCB requirements as well as State standards. Additionally, as discussed in Section 4.c below, the projected wastewater generated from build-out of the draft Specific Plan would not exceed the City WWTP's capacity. Therefore there would be a *less-than-significant* impact to exceeding the wastewater treatment requirements from the proposed Plan.

b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Based on the General Plan projection, the City has already accounted for future development in Riverbank, including the Plan Area.[11] As described in Section A.1 of this chapter, the Sewer Collection System Master Plan recommended several improvements to the sewer collection systems to ensure that the City would have the capacity to meet its wastewater demands according to the projected buildout of the proposed General Plan. Future development from the Plan would be subject to permits as well as associated fees and charges levied on all new development at the time of connection as described above.

The Plan would not require any off-site expansions or new construction of wastewater treatment facilities because the anticipated wastewater generation would be within the capacity of the existing City WWTP. See the response to criteria c) below for additional information on project wastewater volumes versus capacity.

However, as described in Section A.2 of this chapter, the existing sewer pipes on the RAAP site are old and have areas where there are improperly functioning gravity systems, cracked or offset joins, or vertical and/or horizontal

[11] City of Riverbank, 2006, *General Plan 2005-2025.* City of Riverbank, 2007, Sewer *Collection System Master Plan.*

pipe cracks. Consequently, buildout of the Plan would require improvements to existing wastewater collection facilities. The Plan includes Policy PUB-2 that ensures that adequate infrastructure is provided as necessary to support new development. The implementation of this policy will reduce impacts to wastewater collection to a *less-than-significant* level.

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As described in Chapter 4.13, Population and Housing, buildout of the Plan would result in growth for Riverbank that is in line with the anticipated growth under the General Plan and the Sewer Master Plan. Buildout of the Plan could result in construction of as much as 119,058 square feet of commercial/retail and 1,411,542 square feet of industrial space. Using demand factors of 1,200 gpd per acre (or 43,560 square feet) of commercial space and 1,500 gpd per acre of industrial space, as much as 51,887 gpd of wastewater would be generated.[12] Added to existing average demand of 1.82 mgd[13], this demand would not exceed the WWTP's existing peak capacity of 7.9 mgd. As a result, a *less-than-significant* impact would occur.

5. Cumulative Impacts

This section analyzes potential impacts to sanitary wastewater that could occur from the Plan in combination with reasonably foreseeable growth in Riverbank.

As discussed above, development associated with the Plan would comply with RWQCB treatment standards for wastewater. Buildout of the Plan would increase the volume of wastewater for treatment at the City WWTP; however, as this increase represents only approximately 0.6 percent of the existing peak treatment capacity, and as it would occur incrementally over a period of

[12] Demand factors are the same used in the 2007 Sewer Collection System Master Plan, 2007.

[13] City of Riverbank, 2007, *2007 Sewer Collection System Master Plan.*

20 years, it would not be cumulatively considerable, and would result in a *less-than-significant* cumulative impact.

6. Impacts and Mitigation Measures

The Plan would not result in any significant impacts to wastewater; therefore, no mitigation measures are necessary.

B. Water Supply

1. Regulatory Framework

a. Federal Regulations

The following is federal regulations that affect water service in the Plan Area.

i. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), passed in 1974, is the initial federal legislation passed to ensure the quality of drinking water. The law was amended in 1986 and 1996, and requires many actions to protect drinking water and its sources, such as rivers, lakes, reservoirs, springs, and ground water wells.[14] Under SDWA, the US Environmental Protection Agency (US EPA) sets standards for drinking water quality and oversees the water suppliers that implement those standards. Regulatory standards established by the SDWA include maximum allowable levels of chemicals and other substances in drinking water, protocols for monitoring drinking water quality and methods for treating drinking water.

In 1976, California enacted its own Safe Drinking Water Act (Health and Safety Code Section 116270 et seq.), granting the California Department of Health Services (CDHS) primary enforcement responsibility. In 1989, the California Legislature passed Assembly Bill 21 (Sher, Chapter 823, Statutes of

[14] United States Environmental Protection Agency (US EPA), http://water.epa.gov/lawsregs/rulesregs/sdwa/, accessed on May 7, 2012.

1989), which amended California's Safe Drinking Water Act.[15] The law requires the California Department of Public Health (CDPH) to regulate drinking water by:

- Setting and enforcing federal and State drinking water standards;
- Administering water quality testing programs; and
- Administering permits for public water system operations.

The standards established by the CDPH are found in the California Code of Regulations, Title 22.

b. State Regulations

The following are State regulations that affect water service in the Plan Area.

i. Senate Bill 610 and Assembly Bill 901

Senate Bills (SB) 610 and Assembly Bill (AB) 901, Water Supply Planning, amend the Public Resources and Water Codes as they pertain to consultation with water supply agencies, urban water management plans, and State funding restrictions for agencies who do not prepare urban management plans and water supply assessments. SB 610 requires water supply assessments (WSAs) for "projects" (as defined by Water Code § 10912 and of which the Specific Plan is one such "project"), that are subject to the California Environmental Quality Act (CEQA).

The basic requirement of WSAs is that they include a discussion of whether projected water supplies available during normal, single dry and multiple dry water years during a 20-year projection will meet the projected demand of existing and planned future uses, plus the demand of the proposed project. If water demand is accounted for in an adopted Urban Water Management Plan (UWMP), the WSA may incorporate UWMP information. If the UWMP does not account for the project's projected demand, the WSA must be based

[15] California Senate Office of Research, http://www.sor.govoffice3.com/vertical/Sites/%7b3bdd1595-792b-4d20-8d44-626ef05648c7%7d/uploads/%7bebdeb6f2-dbd7-4728-b2d3-c627be99185a%7d.pdf, accessed on May 7, 2012.

on the available evidentiary record. If a project's water supply includes groundwater, the WSA must include a review of UWMP information, a description of the relevant groundwater basin(s), a detailed description and analysis of the amount and location of groundwater pumped by the public water system, a detailed description and analysis of the amount and location of groundwater projected to be pumped by the public water system and an analysis of whether groundwater is sufficient to supply projected water demand. Weston Solutions prepared a WSA for the RAAP site in 2011 and updated it in February 2013 (see Appendix D of this Draft EIR). The WSA is schedule to be approved by the City Council prior to adoption of this Draft EIR.[16]

ii. California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), which was passed in California in 1969, the State Water Resources Control Board (SWRCB) has the ultimate authority over State water rights and water quality policy. Porter-Cologne also establishes nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater.[17] Riverbank is overseen by the Central Valley RWQCB.

iii. California Urban Water Management Planning Act

Through the Urban Water Management Planning Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. This requirement applies to all suppliers providing water to more

[16] Pam Carder, Riverbank Local Redevelopment Authority, email conversation with The Planning Center | DC&E, February 12, 2013.

[17] California Wetlands Information System, *Summary of the Porter-Cologne Water Quality Control Act,* http://ceres.ca.gov/wetlands/permitting/Porter_summary.html, accessed on May 7, 2012.

than 3,000 customers or supplying more than 3,000 acre-feet[18] of water annually. The Act is intended to support conservation and efficient use of urban water supplies at the local level. The Act requires that total projected water use be compared to water supply sources over the next 20 years in five-year increments, that planning occur for single and multiple dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses.[19] The City of Riverbank has developed a UWMP and included the Plan Area in their future developments, as described below in detail.

iv. California Groundwater Management Act

The Groundwater Management Act of the California Water Code (AB 3030) provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMP) in State-designated groundwater basins. GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality.[20]

Some groundwater basins in California are managed through adjudication, and groundwater rights of all the overliers and appropriators are determined by the court. The RAAP site is located within the Modesto Groundwater Subbasin, which has not been adjudicated. The groundwater aquifers serving the RAAP site are recharged by percolating groundwater. The RAAP wells will be owned by the City of Riverbank, and their use will be overseen by the

[18] 1 acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1-foot.

[19] Department of Water Resources, *About Urban Water Management,* http://www.water.ca.gov/urbanwatermanagement/, accessed on May 7, 2012.

[20] Department of Water Resources Planning and Local Assistance Central District, Groundwater, *Groundwater Management,* http://www.cd.water.ca.gov/groundwater/gwab3030.cfm, accessed on May 7, 2012.

City of Riverbank and the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which includes the City of Riverbank.[21]

v. The Water Conservation Act of 2009 (Senate Bill x7-7)[22]

Senate Bill x7-7 (SBx7-7) requires all water suppliers to increase water use efficiency. SBx7-7 mandates the reduction of per capita water use and agricultural water use throughout the state by 20 percent by 2020.

vi. The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881)[23]

Assembly Bill 1881 requires cities and counties (including charter cities and counties) to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the California Updated Model Water Efficient Landscape Ordinance that went into effect in October 2009.[24] Until such time as the City's amendments are complete, the provisions of the Updated Model Landscape Ordinance are in effect.[25] According to the California Department of Water Resources, the City of Riverbank has not adopted a landscape water conservation ordinance; therefore, the standards set forth in the Updated Model Landscape Ordinance would apply.[26]

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[21] Weston Solutions, 2013, *SB 610 Water Supply Assessment for the Riverbank Army Ammunition Plant.*

[22] California Department of Water Resources, http://www.water.ca.gov/wateruseefficiency/sb7/, accessed May 7, 2012.

[23] California Department of Water Resources, http://www.water.ca.gov/wateruseefficiency/landscapeordinance/, accessed May 7, 2012.

[24] Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495.

[25] AquaSave, AB 1881, http://aquasave.us/ab1881.html, accessed on May 7, 2012.

[26] ftp://ftp.water.ca.gov/Model-Water-Efficient-Landscape-Ordinance/Local-Ordinances/, accessed on May 7, 2012.

c. Local Regulations

Locally, wastewater treatment and planning is regulated at the city level, as described below.

i. City of Riverbank Urban Water Management Plan

The City of Riverbank adopted the 2007 UWMP in accordance with State of California Assembly Bill 797 and the Urban Water Management Planning Act, outlined in Section 10610 of Division 6 of the California Water Code. The 2007 UWMP includes an assessment of groundwater supply for the General Plan Area, including the RAAP site. The UWMP development assumptions differ slightly from the draft Specific Plan, however the overall water demand assumptions are similar. The UWMP assumes that the majority of the RAAP site would be used for Industrial/Business Park development, with a small portion planned for Medium-Density Residential. The UWMP determines that there is adequate groundwater to supply existing development in the City of Riverbank as well as the planned development subareas.

ii. City of Riverbank Water Supply Study and Water Master Plan (2007)

The City of Riverbank prepared the Water Supply Study and Water Master Plan (Water Master Plan) in November 2007 to ensure that the City system can adequately meet the demands of development goals adopted in the General Plan. The Water Master Plan addresses four major issues: a) projected water demands based on land uses from the General Plan; b) the future supply and distribution system to accommodate expanded service areas; c) the capacity and condition of the existing distribution system; and d) a phased Capital Improvements Program (CIP) that provides appropriate infrastructure to support growth while remedying existing system deficiencies.

iii. City of Riverbank General Plan

Goals and policies from the Riverbank General Plan that are relevant to water are listed in Table 4.17-3.

TABLE 4.17-3 **GENERAL PLAN GOALS AND POLICIES RELEVANT TO WATER SUPPLY**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-1	**Public service and infrastructure provision to meet or exceed level of service standards consistent with other community goals.**
Policy PUBLIC-1.2	New development must pay for the public facilities, services, and infrastructure required to serve the needs of such development based on service standards applied by the City. The mechanisms for such funding will be part of the development approval, or as set forth in any applicable development agreement or specific plan, which, with the approval of the City Council, may provide for alternative financing mechanisms in-lieu of City development fee programs and ordinances. The use of in-lieu fees or in-lieu financing will be reserved for communitywide facilities that serve areas beyond the proposed project or plan. Construction and dedication of facilities will be the method for providing facilities that serve the proposed project or plan area. The City may make exceptions on the basis of financial hardship or small projects or plans, allowing payment of an in-lieu fee.
Policy PUBLIC-1.3	The City will require that new developments, depending on their size, either: 1) designate lands in appropriate locations, sizes, and free of constraints to accommodate public facilities and infrastructure needed to serve such development, or 2) pay a fee proportional to the development's cost of acquiring such land at the time acquisition will be required.
Policy PUBLIC-1.6	The City will require that the methods, materials, and design of infrastructure and utilities achieve the City's environmental, public health and safety, and community character goals and policies, in addition to the City's level of service standards for public services, facilities, and infrastructure.
Policy PUBLIC-1.7	New development projects shall provide compatible utility services in common trenching to minimize the land required and ongoing costs for underground services.
Goal PUBLIC-2	**Adequate supply of quality water to serve existing and future projected development needs.**
Policy PUBLIC-2.1	The City will require that water supply, treatment, and delivery meet or exceed local, State, and federal standards.

Goal/Policy Number	Goal/Policy Content
Policy PUBLIC-2.2	The City will manage and enhance the City's water supply and facilities to accommodate existing and planned development, as identified in the City's Water Master Plan, Urban Water Management Plan, and Groundwater Source Efficiency Report.
Policy PUBLIC-2.3	New developments shall incorporate water conservation techniques to reduce water demand in new growth areas, including the use of reclaimed water for landscaping and irrigation.
Policy PUBLIC-2.4	The City will condition approval of new developments on demonstrating the availability of adequate water supply and infrastructure, including multiple dry years, as addressed in the City's Water Master Plan, Urban Water Management Plan, and Groundwater Source Efficiency Report.

Source: City of Riverbank, 2006, General Plan 2005-2025.

2. Existing Conditions

Currently, the RAAP operates a water system that serves the entire facility, including 26 service connections at points throughout the RAAP site. There are a total of six wells on the site, identified as Wells 1 through 6; only Wells 1, 5, and 6 are operational. Treatment of the water supply is accomplished at the well head by gas chlorination. It is assumed that the wells and the water system in the Plan Area will be managed by the Riverbank Local Redevelopment Authority (RLRA) when the Plan is adopted.

a. Existing Water Supply

The RAAP site is located within the Modesto Groundwater Subbasin. The subbasin is bounded to the north by the Stanislaus River, to the south by the Tuolumne River, to the east by the bedrock of the foothills, and to the west by the San Joaquin River. The Stanislaus River is a significant source of groundwater recharge to the subbasin.

Within the Modesto Groundwater Subbasin, groundwater is found in a total of four aquifers. However, only two of the four aquifers underlie the RAAP site: 1) deep confined aquifers within consolidated sediments of the Mehrten,

Valley Springs, and Ione formations; and 2) the shallow unconfined Forebay aquifers consisting of the Laguna, Turlock Lake, and Riverbank formations.[27]

The existing RAAP groundwater supply system consists of three production wells, Wells 1, 5, and 6. Two additional wells, Wells No. 2 and 3 are not currently permitted for potable use. Well No. 4 was abandoned immediately after its construction due to high nitrate concentrations. The capacity of the each well is shown in Table 4.17-4.

TABLE 4.17-4 **WATER WELL INFORMATION**

Source	Capacity (gpm)	Depth (Feet)	Status
Well 1	765 gpm	430	Standby
Well 2	715 gpm	372	Standby – Not approved for Potable Use
Well 3	710 gpm	185	Standby – Not approved for Potable Use
Well 5	1100 gpm	710	Active
Well 6	1500 gpm	605	Active

Source: Weston Solutions, SB 610 Water Supply Assessment for the Riverbank Army Ammunition Plant, 2013.

The RAAP site has one existing water storage tank. The tank has a 100,000-gallon capacity but is presently operated over a range of 0 to 40,000 gallons. Seismic analysis led to the tank being restricted to 40,000 gallons. The low waterline on the tank is 106 feet above grade, resulting in a static pressure of 46 per square inch (psi) at grade. At the maximum water level, the static pressure is at 50 psi at grade. The two primary wells are used to supply the pota-

[27] Weston Solutions, SB 610 Water Supply Assessment for the Riverbank Army Ammunition Plant, 2013.

ble distribution system via this elevated tank. Much of the distribution system on the RAAP site varies from 60 to 80 years old.[28]

b. Water Demand

Based on historical pumping data, the average day demand between 1992 and 2003 ranged between 18,208 gallons per day (gpd) and 64,473 gpd.[29]

The WSA has estimated the water demands for the development proposed by the draft Specific Plan based on the assumptions used in the 2007 UWMP and the 2007 Water Master Plan, as shown in Table 4.17-5. The estimated demands for the RAAP site in the WSA are slightly lower than the ones in the 2007 UWMP[30] because the proposed Plan does not include residential development, while the 2007 UWMP assumed residential development on the RAAP site.

TABLE 4.17-5 **WSA ESTIMATED DEMAND**

Parcel	Gross Acreage	Demand Factor (gpd/acre)	Average Daily Demand (gpd)	Maximum Daily Demand (gpd)	Peak Hour Demand (gpm)	Yearly Demand (acre-ft/ year)
Main Plant	75.6	2,000	105,840	243,432	257	119
Other parcels within the Plan Area	53	2,000	74,200	170,660	181	83
Total	**128.6**		**180,040**	**414,092**	**438**	**202**

Source: Weston Solutions, SB 610 Water Supply Assessment Final, 2013.

[28] Weston Solutions, Operations and Infrastructure Assessment – Riverbank Army Ammunition Plant, July 2010.

[29] Weston Solutions, *SB 610 Water Supply Assessment Final*, 2013. Data between 2004 and present is not available.

[30] The 2007 UWMP estimated a total average daily demand of 185,656 gpd for the RAAP site.

c. Future Water Supply Needs

The 2007 UWMP analyzed the projected water supply during hydrologic normal, single dry, and multiple dry years for the General Plan. The 2007 UWMP found that the groundwater pumping rates would fall within the safe yield of the groundwater basin, and future groundwater extraction within the General Plan area would fall within the recharge capacity of the basin, as shown in Table 4.17-6.

TABLE 4.17-6 **UWMP SUPPLY AND DEMAND (ACRE-FT/YEAR)**

	2005 Pre-Plan Implementation	2012 Buildout	2016 Single Dry Year	2022 Normal	2030 Multi-Dry Years
Supply Capacity	88,956	78,982	63,180	78,982	47,419
Projected Demand	26,843	21,091	18,982	21,091	17,927
Groundwater Supply Reserve	62,113	57,891	44,198	57,891	28,492

Source: City of Riverbank, 2007 UWMP, 2007.

The 2007 UWMP proposes to install six new wells in the eastern area of Riverbank, each sized at 1,500 gpm, to service development in Planning Subarea 2 and Planning Subarea 3. The RAAP site is part of Planning Subarea 3.

Four of the wells would be used to supply average and maximum daily demand, and the remaining two wells would be used as emergency standby. The 2007 UWMP does not plan to use the existing RAAP on-site wells.

d. Water Quality

The RAAP water supply system currently operates under the following permits issued by the California Department of Health Services, Division of Drinking Water and Environmental Management Branch:

- Original Permit No. 03-10-03P-005 issued 5/14/2003 – Approves Wells 1, 5, and 6 for potable water supply.
- Permit Amendment No. 03-10-05PA-004 issued 04/15/2005 – Changes status of Well 1 from "Active" to "Standby."

3. Standards of Significance

The Plan would have a significant impact related to water supply if it would:

a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

b. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

4. Impacts Discussion

a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The WSA for the Plan Area has calculated the water demands from the Plan development, as shown in Table 4.17-5, and concludes that the two active on-site wells and the storage tank within the Plan Area have enough capacity to serve the RAAP redevelopment for the next 20 years.

While the WSA concludes the existing water treatment facilities are sufficient for development under the proposed Plan, the Plan recommends adding storage tanks to the RAAP site or connecting to the City system on Claus Road via a minimum 4-inch pipe and the looped distribution system near Building 9.

Moreover, the 2007 UWMP has included a consideration of development in the Plan Area over the next 20 years even though the WSA does not assume connecting to the City's water supply systems. Therefore, implementation of the proposed Plan would not include any improvements that are not already included in the 2007 UWMP or in the 2007 Water Master Plan. Additionally,

future development from the Plan would be subject to associated fees and charges levied on all new development as described in Section A.1.c.iv.

As a result, the impact of the proposed Plan on water treatment facilities would be *less than significant.*

b. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

The WSA prepared for the Plan concludes that the two active on-site wells, which have the total capacity of approximately 2,600 gpm, would exceed the estimated peak hour demand of 438 gpm and the yearly demand of 202 afy for the proposed Plan. Moreover, because the on-site wells are screened within the same aquifers as the City's portable wells and the City has adequate groundwater supply reserve to supply the RAAP site, as shown in Table 4.17-6, the WSA concludes that the on-site wells have sufficient capacity to meet the future demands for the proposed Plan. Therefore, there would be a *less-than-significant* impact from having an insufficient water supply.

5. Cumulative Impacts

This section analyzes potential cumulative impacts to water supply that could occur from buildout of the Plan in combination with other past, present, and reasonably foreseeable projects in Riverbank and the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank sphere of influence (SOI), as defined in the Riverbank General Plan. Cumulative impacts would be significant if development associated with the Plan together with other projects in the Riverbank SOI would result in insufficient water supply, construction of new water treatment facilities, or expansion of existing facilities.

In the 2007 UWMP and the 2007 Water Master Plan, the City assessed future water demand for its service area, which includes the City of Riverbank SOI. The 2007 UWMP determined that the groundwater supply reserve of 29,492 afy under multiple dry years will be sufficient to accommodate future demand in the service area through 2030. The 2007 Water Master Plan also identified

existing deficiencies in water treatment capacity in the service area and taken action to correct them through the CIP Program. Therefore, all reasonably foreseeable projects have been considered in the 2007 UWMP and the 2007 Water Master Plan assessments. Consequently, the proposed Plan would result in a *less-than-significant* cumulative impact on water supply.

6. Impacts and Mitigation Measures

The Plan would not result in any significant impacts to water supply; therefore, no mitigation measures are necessary.

C. Stormwater

1. Regulatory Framework

There are several laws and policy documents that affect the requirements and infrastructure needs for water quality and stormwater discharge in the Specific Plan Area, as well as flood protection. The most important of these are described below.

a. Federal Regulations

i. Federal Water Pollution Control Act

The Federal Water Pollution Control Act, more commonly known as the Clean Water Act (CWA) of 1972, regulates the discharge of pollutants into watersheds throughout the nation. Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires the State to develop a total maximum daily load (TMDL) for each of the pollutants impacting the listed water bodies. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given water body on the Section 303(d) list would be remediated.

Section 402(p) of the CWA establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program.[31] Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by a NPDES permit. On December 8, 1999, the US Environmental Protection Agency (EPA) circulated Phase II regulations for non-point sources requiring permits for stormwater. Permits will be required for discharges from Small Municipal Separate Storm Sewer System (MS4s) operators.[32] In California, the NPDES program is administered by the State (see below).

b. State Regulations and Agencies

i. State Water Resources Control Board

The State Water Resources Control Board (SWRCB) is responsible for implementing the CWA and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges – individual permits and general permits. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0004-DWQ) for MS4s covered under the CWA to efficiently regulate numerous stormwater discharges under a single permit. Permitees must meet the requirements in Provision D of

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[31] Authorized by the CWA, the permit program controls water pollution by regulating point sources (discrete conveyances such as pipes or man-made ditches) that discharge pollutants into waters of the United States. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In most cases, the NPDES permit program is administered by authorized states with oversight from the EPA. Summarized from the EPA website, http://cfpub.epa.gov/npdes/, accessed on July 21, 2009.

[32] Small MS4s are publicly owned conveyances or conveyance systems of ditches, curbs, or underground pipes that divert stormwater into the surface waters of the State. Summarized from the EPA website, http://cfpub.epa.gov/npdes/stormwater/munic.cfm, accessed on July 21, 2009.

the General Permit, which require development and implementation of a Storm Water Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. A SWMP for the RAAP site was prepared by Weston Solutions in 2011.

The RAAP holds a NPDES General Permit for discharges of stormwater associated with industrial activities. Stormwater permits are general State permits where dischargers need to comply with permit and plan requirements (i.e. maintain a program that meets permit conditions and a Stormwater Pollution Prevention Plan that details how the facility will meet the requirements). Compliance with the general permit requires inspections, control of runoff from industrial areas and sampling of discharges. The permit states that when the operator changes a new Notice of Intent, site map, and fee should be submitted by the new operator.[33]

ii. Regional Water Quality Control Board

The State's Porter-Cologne Water Quality Control Act outlines the specific responsibilities of the Regional Water Quality Control Boards (RWQCB), and the procedures for coordinating with the SWQCB to meet federal CWA standards. Stanislaus County falls within the Central Valley Region, which is the largest in the State, stretching from the Oregon border south to Los Angeles County. It encompasses 60,000 square miles, or about 40 percent of the State's total area, and includes 38 of the State's 58 counties. The Central Valley Regional Water Quality Control Board (CVRWQCB) headquarters are in Sacramento with branch offices in Redding and Fresno.

The CVRWQCB's mission is to "preserve and enhance the quality of California's water resources for the benefit of present and future generations." This duty is carried out by formulating and adopting water quality control plans for specific ground and surface water basins and by prescribing and enforcing requirements on waste discharges. As mentioned above, jurisdictions

[33] State Water Resources Control Board, NPDES General Permit to discharge of stormwater associated with industrial activity, WDID ID No. 5S50I015886, 2000.

submit various water quality and stormwater plans to the regional and State boards for approvals.[34]

c. Local Regulations and Agencies

i. City of Riverbank General Plan 2005-2025

Goals, policies, and programs from the Riverbank General Plan that are relevant to stormwater are listed in Table 4.17-7.

2. Existing Conditions

In general, stormwater runoff is collected in numerous inlets located around the site that connect to a main storm drain line. The main storm drain line carries flows towards the north, opposite the surface grade. At Gate 10, flow is directed through a diversion structure. A valve located at the discharge of the diversion structure remains open allowing stormwater runoff to travel through the diversion structure and down a 36-inch pipe towards a lift station, located adjacent to the north stormwater reservoir. Pumps 1 and 2 of the lift station convey flow into the north reservoir. This reservoir is designed as a detention basin that allows for temporary stormwater runoff to facilitate settling of suspended sediment. Two outlets, with approximately one foot of elevation difference, are provided in the reservoir to discharge water into the Oakdale Irrigation District (OID) 30-inch diameter line that runs parallel to the north side of the reservoir. Between rain events, some water remains in the reservoir, below the outlets, and either evaporates, infiltrates into the ground, or is used by the vegetation that grows in the basin. The lift station located near the reservoir has a third smaller pump that conveys stormwater from the lift station directly to the OID pipe during periods of excessive rain.

Rodents, mainly squirrels, have dug a large hole completely through the south bank of the reservoir. The hole is located a short distance above the normal level of standing water in the reservoir; therefore, the holding capacity of the reservoir is greatly reduced. The lower elevation outlet is normally

[34] http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml, accessed on May 9, 2012.

TABLE 4.17-7 **GENERAL PLAN GOALS AND POLICIES RELEVANT TO STORMWATER**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-4	**Storm drainage systems that protect public safety, preserve natural resources, and prevent erosion and flood potential.**
Policy PUBLIC-4.1	The City will maintain and improve, as necessary, existing public storm basins and flood control facilities, as identified in the Stormwater Master Plan.
Policy PUBLIC-4.2	The City will coordinate with County and Regional agencies, as well as the railroad, in the maintenance and improvement of storm drainage facilities to protect the City's residents, property, and structures from flood hazards.
Policy PUBLIC-4.3	The City will consider a variety of means for floodplain management, depending on the context, which may include development, improvement, and maintenance of structural flood control facilities; land use policy and zoning to prohibit incompatible urban development within the floodplain; erosion control techniques; setbacks from flood-prone areas; and other measures, as circumstances dictate.
Policy PUBLIC-4.5	New development shall be designed to control surface runoff discharges to comply with the National Pollutant Discharge Elimination System Permit and the receiving water limitations assigned by the Regional Water Quality Control Board.
Policy PUBLIC-4.6	The City will establish and new development shall implement nonpoint source pollution control measures and programs designed to reduce and control the discharge of pollutants into the City's storm drains and river.
Policy PUBLIC-4.7	The City will require minimization of the amount of new impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and, where feasible, maximize on-site infiltration of stormwater runoff.

Source: City of Riverbank, 2006, General Plan 2005-2025.

closed allowing the reservoir to fill to the higher inlet level prior to discharge, but since the squirrel hole was discovered, the valve for the lower elevation outlet has been left in the open position.[35]

[35] Weston Solutions, Stormwater Master Plan Final Report for the Riverbank Army Ammunition Plant, February 25, 2011.

The north reservoir has a design capacity of approximately 3.0 million gallons (MGAL). More specifically, the capacity includes 1.5 MGAL in the west side, which typically has approximately 2 feet of ponding water, and 1.5 MGAL in the east side, or overflow side, which is typically dry.

A small portion of the site drains to the south stormwater reservoir, located near the southeast corner of the site. A lift station adjacent to the south stormwater reservoir pumps runoff from the reservoir to the south end, or high side, of the above-mentioned main storm drain.
Generally, the system is operating properly but has some deficiencies. The deficiencies include cracked or offset joints, horizontal or vertical cracking in the concrete pipe, and low areas in pipes where waste is settling. According to the Stormwater Master Plan, prepared by Weston Solutions, the existing storm drain main line piping is considerably undersized when compared with current standards. The current system is capable of conveying stormwater runoff from storm events with roughly a two-year return period or less, while the County Standards require a capacity of 10-year return period or larger for new systems. Additionally, the 10-year storm would require approximately 1.0 acre-feet of storage volume, which is greater than the storage volume provided by the existing lift station, and thus the excess runoff would be stored as ponding water around various inlets and low points, which results in flooding.

3. Standards of Significance

The Plan would have a significant impact related to stormwater if it would:

a. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4. Impacts Discussion

a. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Development under the proposed Plan would have the potential to cause significant impacts by increasing stormwater runoff associated with construction activities and increasing impermeable surfaces, thereby placing greater demands on the stormwater handling system. Runoff from developed surfaces, building roofs, parking lots, and roads also contain impurities and has the potential to increase flooding.

The General Plan goals and policies call for the provision of an adequate drainage infrastructure, in order to protect public safety, preserve natural resources, and prevent erosion and flood potential, as described in Section C.1 of this chapter. Goal PUB-1 of the draft Specific Plan requires that adequate facilities are provided that serve the needs of new development. Policy PUB-1 specifies that investment is made in new "backbone" infrastructure on the North and South End Cap properties to attract new development at the RAAP. Additionally, Policy PUB-2 ensures that adequate infrastructure is provided as necessary to support new development. Furthermore the draft Specific Plan includes Goal PUB-2 and Policy PUB-3 that call for sustainable infrastructure that exhibits principles of low-impact development (LID) and "green" infrastructure, such as on-site stormwater management, water reclamation, permeable surfaces, solar, and clean energy. With these goals and policies in place, buildout of the proposed Plan would not increase demands on the stormwater handling system, and stormwater facilities would be upgraded and expanded, as necessary to facilitate development within the project site. As a result, a *less-than-signficant* impact would occur on stormwater treatment facilities.

5. Cumulative Impacts

This section analyzes potential impacts to stormwater systems that could occur from the proposed Plan in combination with other reasonably foreseeable

projects in the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank SOI, as defined in the Riverbank General Plan.

As described above, all the stormwater from the Plan Area would be treated on site. Development under the proposed Plan would comply with draft Specific Plan Goal PUB-2 and Policy PUB-3 and includes low impact development and sustainable design approaches for stormwater management. With Mitigation Measure UTIL-2 in place, cumulative impacts to stormwater systems would therefore be *less than significant.*

6. Impacts and Mitigation Measures

The following impacts and mitigation measures have been identified with regard to stormwater.

Impact UTIL-1: Buildout of the Plan would require improvements to existing stormwater facilities. The existing stormwater pipes have areas where there are improperly functioning gravity systems, cracked or offset joins, or vertical and/or horizontal pipe cracks. Other deficiencies in the existing stormwater system include the squirrel hole in the reservoir and the undersized main line piping. With the existing deficiencies, the proposed Plan would have the potential to increase flooding. This would be a *significant* impact.

Mitigation Measure UTIL-1: The Stormwater Master Plan for the proposed Plan recommends the following measures:

- Manholes should be repaired to ensure the lids seal properly to prevent inflow and infiltration of storm water during rain events.
- In order to mitigate the possible contamination of polychlorinated biphenyls (PCBs) within the storm drain, one of the following options could be implemented:
  - Clean and apply a lining or coating to all affected storm drain pipes;
  - Replace affected storm drain pipes with larger pipes;

- A combination of lining a portion of the storm drain pipes and replacing other storm drain pipes: this involves adding a second pipe between the north reservoir lift station and the diversion structure located near Gate 10. Also includes replacing storm drain piping, with larger pipe size, from the diversion structure to the Building Group.

♦ Current County Standards require new systems to have a capacity to convey storm events equal to the 10-year return period or larger. Lining the interior of affected piping is a cost effective way to mitigate potential contamination of pipes while providing approximately the same (slightly improved) level of service in relation to stormwater conveyance.

♦ If there are opportunities to upgrade the lift station pumping capacity in the future, the LRA should use that opportunity to significantly increase lift station capacity. Increasing size (i.e. conveyance capacity) of storm drain piping upstream from the north lift station will not be effective unless the lift station capacity is increased.

♦ Improvements to the existing north reservoir should be completed at the LRA's earliest opportunity. The squirrel hole(s) in the reservoir bank should be repaired and the lower outlet valve returned to the normal operating position (i.e. closed). This would allow more storage capacity of the reservoir prior to discharge, which would allow more time for suspended soils to settle out in stormwater traveling through the reservoir during rainfall events. Currently, the exterior bank slope is approximately 2:1 (horizontal to vertical). The slopes may be reduced as much possible within the constraints of space allotted to the reservoir (i.e. approximately 3:1) to reduce the possibility of the rodent holes extending through the bank. Additionally, the repaired slopes may be hardened with rock or crushed brick to make it more difficult for rodents to penetrate the surface.

♦ To determine the performance of the reservoir outlets, a detailed hydraulic analysis of the OID piping would need to be accomplished. The 10-year and 50-year storm events produce approximately 4.0

MGAL and 4.2 MGAL, respectively. Therefore, the combined outlet piping would need to discharge approximately 1.0 to 1.2 MGAL to prevent the reservoir from becoming full and having water overtopping the banks during these types of storm events. In order to discharge 1.2 MGAL, the outlet piping would need to discharge at an average rate of 3.2 cubic feet per second (cfs) over a 24-hour period. This is a relatively small flow rate and most likely the discharge piping connected to the OID piping and overflow piping would prevent the reservoir from reaching maximum capacity during these types of storms events (i.e. approximately 3.2 cfs is the minimum required and unrestricted gravity flow to OID piping would be approximately 10 cfs, if the OID piping was empty and able to accept full gravity flow).

- If the properties around the reservoir are developed, additional analysis to determine the OID piping hydraulic capacity should be conducted and, if needed, the north reservoir should be increased in size to prevent potential flooding of the newly developed sites. By removing the earthen divider and extending the basin to the northeast by approximately 120 feet, the reservoir capacity could be increased to approximately 4.5 MGAL. This would provide the additional capacity necessary to ensure the basin can adequately store stormwater runoff from larger events even if the OID has little or no capacity to receive water from the reservoir outlets.

- Based on the results of percolation testing, the soils within the site appear to have adequate capacity to infiltrate stormwater directed into basins, swales, or rain gardens. Final design for these areas of the site should include additional percolation testing in order to estimate infiltration rates at the locations and depths of final design basins and other LID components proposed within these areas.

- Future development should include LID features to the maximum extent practical, and at a minimum LID components (in additional to large infiltration basins) should cover 15 percent of the total site area. This minimum percentage is based on the example site layout conducted as part of this study that incorporates LID features into a prac-

tical commercial site layout. The LID components may include, but not be limited to the following:

- Shallow infiltration basins
- Bioretention basin / rain gardens
- Porous concrete within parking stalls
- Rainwater harvesting system (cisterns and/or rain barrels)

♦ In addition to structural LID components, sites should be designed to minimize continuous impervious surfaces where possible. This includes providing landscaping around buildings and breaks between roadways and sidewalks. This also includes generally reducing the amount of impervious surfaces around sites.

Significance After Mitigation: This impact would be *less than significant* after implementation of this mitigation measure.

D. Solid Waste

This section describes existing conditions and potential impacts of the Plan with regard to solid waste services.

1. Regulatory Framework

a. State Regulations

Solid waste handling and disposal is regulated at the State level. Specific regulations relevant to the proposed Plan are described below.

i. California Integrated Waste Management Act

California Integrated Waste Management Act of 1989 (AB 939 or Public Resources Code Section 40050 et seq.)[36] set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, though source reduction, recycling and composting. To help achieve this, the Act requires that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal

[36] Public Resources Code Section 40050-40063, http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=40001-41000&file=40050-40063, accessed on May 4, 2012.

for all California counties to provide at least 15 years of on-going landfill capacity.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. CIWMB, now known as the California Department of Resources Recycling and Recovery (CalRecycle), sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CIWMB with an update of its progress in implementing diversion programs and its current per capital disposal rate.[37]

Stanislaus County and the cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock and Waterford developed a Countywide Integrated Waste Management Plan (CIWMP) that identified strategies for meeting the 50 percent diversion goal. The CIWMP consists of: Source Reduction and Recycling Elements (SRRE), Household Hazardous Waste Elements (HHWE), and Non-Disposal Facility Elements (NDFE) for each individual jurisdiction, plus a countywide Siting Element and Summary Plan. The State of California Public Resources Code (PRC) requires each jurisdiction or agency to review its CIWMP at least once every five years. The CIWMP Five-Year Review Report for the County of Stanislaus was approved by the CalRecycle in June 2011.

ii. California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act (Public Resources Code Sections 42900 et seq.)[38] requires areas to be set aside for collecting and loading recyclable materials in development projects. The Act required the CIWMB to develop a model ordinance for adoption by any local

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[37] California Integrated Waste Management Board, http://www.calrecycle.ca.gov/LGCentral/Basics/PerCapitaDsp.htm#Jurisdiction, accessed on May 7, 2012.

[38] Public Resources Code Section 42900-42901, http://www.leginfo.ca.gov/cgi-bin/waisgate?WAISdocID=47078826743+0+0+0&WAISaction=retrieve, accessed on May 7, 2012.

agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects.

b. Local Regulations and Agencies

i. City of Riverbank General Plan 2005-2025

Goals, policies, and programs from the Riverbank General Plan that are relevant to solid waste services are listed in Table 4.17-8.

TABLE 4.17-8 **GENERAL PLAN GOALS AND POLICIES RELEVANT TO SOLID WASTE**

Goal/Policy Number	Goal/Policy Content
Goal PUBLIC-5	**Adequate capacity for solid waste disposal.**
Policy PUBLIC-5.1	The City will approve new development projects only if adequate capacity exists to accommodate solid waste demand, including processing, recycling, transportation, and disposal.
Policy PUBLIC-5.2	The City will encourage provision of recycling and conservation service and public education to reduce the amount of solid waste at the landfill.

Source: City of Riverbank, 2006, General Plan 2005-2025.

2. Existing Conditions

Gilton Solid Waste (GSW) collects solid waste from residences and businesses from Riverbank, including the Plan Area. GSW serves approximately 6,600 residences in the City. Annually, GSW hauls approximately 11,600 tons of waste from Riverbank residential customers, or about 1.76 tons per household. GSW hauls approximately 3,000 tons of waste from commercial sources and approximately 2,300 tons of waste from industrial and construction sources annually in the City.[39]

[39] Dennis Shuler, Environmental Affairs Manager, Gilton Solid Waste Management, Inc. Email communication with The Planning Center | DC&E, on May 10, 2012.

As the franchise waste hauler, GSW is contractually obligated to accommodate any increase in the need for residential and commercial waste management services. Solid waste hauled by GSW from Riverbank is taken to the Gilton Resource Recovery/Transfer Facility. At the Gilton Resource Recovery/Transfer Facility, much of the recyclable and compostable materials are removed. Residual waste requiring disposal is deposited in two landfills and a waste-to-energy facility: the Forward, Inc. landfill in San Joaquin County, the Fink Road Landfill administered by the County of Stanislaus Public Works Department, and the Covanta Stanislaus administered by the County of Stanislaus Department of Environmental Resources in Stanislaus County.[40]

Covanta Stanislaus is an Energy-from-Waste facility that converts municipal solid waste (MSW) into clean, renewable energy. The facility operates two MSW-fired combustors capable of processing approximately 400 tons per day.[41] The Waste-to-Energy Facility was developed via a public-private partnership among Covanta Stanislaus, Inc., Stanislaus County, and the City of Modesto. Contractually, Covanta Stanislaus is obligated to process at least 243,300 tons of waste annually and the contracting communities, including Stanislaus County and the City of Modesto, are obligated to deliver at least this same amount annually. The facility has processed an average of 253,710 tons per calendar year in the last five years (2007 through 2011).[42] This facility has a permitted capacity of 1,700 tons per day.[43]

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[40] Dennis Shuler, Environmental Affairs Manager, Gilton Solid Waste Management, Inc. Email communication with The Planning Center | DC&E, on May 10, 2012.

[41] Covanta Stanislaus website, http://www.covantaenergy.com/en/facilities/facility-by-location/stanislaus/about.aspx, accessed on May 7, 2012.

[42] Jami Aggers, Assistant Director, Stanislaus County, Department of Environmental Resources. Email communication with The Planning Center | DC&E, on May 3, 2012.

[43] CalRecycle, http://www.calrecycle.ca.gov/, accessed on May 7, 2012.

Under the current permit issued in 2007, the Fink Road Landfill is permitted to receive 2,400 tons per day and estimated to close by 2023.[44] However, according to the Department of Environmental Resources, the Fink Road Landfill has remaining capacity that is estimated to extend to 2029 at the average disposal rate of approximately 400 tons per day.[45] Currently, the facility is pursuing an interior expansion that will add an estimated 10 to 15 years of additional disposal capacity if approved. CEQA for this project was certified by the Board of Supervisors in February 2010, and the development of the application for a revised Solid Waste Facility Permit is underway.[46] Under the permit issued in 2012, the Forward Landfill has a permitted capacity of 8,668 tons per day, and its estimated closure date is in 2012.[47]

In 2010, the Stanislaus County Regional Solid Waste Planning Agency, which the City of Riverbank is included, disposed 299,257 tons of solid waste and achieved a disposal rate of 3.9 pounds per person per day (ppd), which is better than the AB939 goal of 6.3 ppd.[48]

3. Standards of Significance

The Plan would have a significant impact related to solid waste if it would:

a. Not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

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[44] CalRecycle, http://www.calrecycle.ca.gov/, accessed on May 7, 2012.

[45] Jami Aggers, Assistant Director, Stanislaus County, Department of Environmental Resources. Email communication with The Planning Center | DC&E, on May 3, 2012.

[46] Jami Aggers, Assistant Director, Stanislaus County, Department of Environmental Resources. Email communication with The Planning Center | DC&E, on May 3, 2012.

[47] CalRecycle, http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0015/Detail/, accessed on May 7, 2012.

[48] CalRecycle, http://www.calrecycle.ca.gov/LGCentral/Reports/DiversionProgram/JurisdictionDiversionDetail.aspx?JurisdictionID=616&Year=2010, accessed on May 4, 2012. Data for individual cities is not available.

b. Not comply with federal, State, and local statutes and regulations related to solid waste?

4. Impacts Discussion

a. Insufficient Landfill Capacity

Solid waste from the proposed Plan site would be transferred to the Forward, Inc. landfill in San Joaquin County, the Fink Road Landfill, and the Covanta Waste-to-Energy Facility in Stanislaus County. As described above, the Covanta is permitted to receive up to 1,700 tons of waste per day, and the Fink Road Landfill is expected to receive approximately 400 tons per day by 2029 and will add an estimated 10 to 15 years of additional disposal capacity if approved.

As mentioned above, the California Integrated Waste Management Act requires that jurisdictions maintain a 50 percent or better diversion rate for solid waste. The Stanislaus County Regional Solid Waste Planning Agency has achieved this goal from 2006 to 2010, the latest available data.[49] The CIWMB jurisdictional profile for the Stanislaus County Regional Solid Waste Planning Agency indicates that 3.9 pounds of solid waste per resident and 16 pounds per job is generated daily in 2010. Buildout of the Plan would be expected to create as many as 1,654 new jobs in Riverbank,[50] which would result in an additional 13.2 tons of solid waste per day or 4,818 tons annually. Maximum total solid waste generated from the Plan would therefore be approximately 13.2 per day, which is 0.8 percent of the permitted daily capacity of the Covanta, 3.3 percent of the daily capacity of the Fink Road Landfill, or 0.2 percent of the daily capacity of the Forward Landfill. Even through the Forward Landfill would close in 2012; the other two facilities would have sufficient capacity to accommodate the Plan's solid waste disposal needs.

Moreover, the City has set an agreement with the franchised trash disposal companies, such as GSW, to ensure that each franchises is responsible for

[49] Department of Environmental Resources, Stanislaus County Five-Year CIWMP Review Report, June 2011.

[50] See Chapter 4.13, Population and Housing, of this Draft EIR.

meeting the minimum recycling diversion rate of 50 percent on a quarterly basis. Future development in the Plan Area would comply with the GSW's recycling system, and thus, would meet the City's and California's solid waste diversion regulations. Additionally, implementation of goals and policies contained in the Riverbank General Plan would ensure that sufficient landfill capacity is provided and would accommodate the buildout of the proposed Plan. Development under the draft Specific Plan would have a *less-than-significant* impact on solid waste disposal and landfill capacity.

b. Compliance with Solid Waste Statues and Regulations

As part of the City of Riverbank, the Plan Area would be subject to existing Municipal Code and General Plan policies that govern compliance with existing federal, state, and local statutes and regulations pertaining to solid waste. Additionally, as discussed above, the County of Stanislaus has adopted a Source Reduction and Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Non-Disposal Facility Element (NDFE) in compliance with AB939, the California Integrated Waste Management Act of 1989. Implementation of strategies and programs from these plans allowed the County to meet the State mandated waste diversion goal of 50 percent from 2006 to 2010. These programs are sufficient to ensure that future development in the Plan Area would not compromise the ability to meet or perform better than State the mandated target. Therefore, development under the proposed Plan would comply with applicable statutes and regulations and the impact would be *less than significant.*

5. Cumulative Impacts

This section analyzes potential impacts to solid waste services that could occur from a combination of the proposed Plan with other reasonably foreseeable projects in the surrounding area. The geographic scope of this analysis is taken as the GSW service area. A cumulative impact would be considered significant if, taken together with past, present and reasonably foreseeable projects in the GSW service area, it would result in an insufficient landfill capacity or conflict with solid waste statutes and regulations.

The proposed Plan would not make a significant contribution to cumulative impacts relating to solid waste management or disposal. The General Plan policies will ensure that sufficient landfill capacity is provided throughout Riverbank, including the GSW service area. As described above, future development in the GSW service area would comply with the GSW's recycling system, and thus, would meet the City's and California's 50-percent solid waste diversion regulations. Additionally, GSW future plans include improving and updating the equipment and operating capabilities of GSW facility.[51] According to the CIWMP Five-Year Review Report, there would be sufficient landfill capacity until 2025. For the years beyond 2025, goals established by AB 939 will continue to ensure that all California counties provide at least 15 years of on-going landfill capacity. Therefore, cumulative impacts from the proposed Plan would be *less than significant*.

6. Impacts and Mitigation Measures

The Plan would not result in any significant impacts to solid waste; therefore, no mitigation measures are necessary.

[51] Dennis Shuler, Environmental Affairs Manager, Gilton Solid Waste Management, Inc. Email communication with The Planning Center | DC&E, on May 10, 2012.

5 ALTERNATIVES TO THE PROPOSED PROJECT

The RAAP Specific Plan was described and analyzed in the previous chapters with an emphasis on potentially significant impacts and recommended mitigation measures to avoid those impacts. The State CEQA Guidelines require the description and comparative analysis of a range of alternatives to the Specific Plan or to the location of the project, which would feasibly attain most of the basic objectives but would avoid or substantially lessen any of the significant effects. The Guidelines also require that an EIR evaluate the comparative merits of the alternatives, focusing on alternatives that would avoid or substantially lessen any significant effects of the Project, even if these alternatives would impede to some degree the attainment of the Project objectives, or would be more costly (CEQA Guideline Section 15126.6(a), (b)).

"There is no ironclad rule governing the nature or scope of the alternatives to be discussed [in an EIR] other than the rule of reason" (CEQA Guidelines Section 15126.6(a)). Under the rule of reason, an EIR need discuss only those alternatives necessary to permit a reasoned choice (CEQA Guidelines Section 15126.6(f)). An EIR need only contain a "range of reasonable alternatives to the project" which would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant [impacts] of the project" (CEQA Guidelines Section 15126.6(a)).

The following discussion is intended to inform the public and decision makers of the feasible alternatives that would avoid or substantially lessen any significant effects of the project.

A. Alternatives Evaluated

CEQA requires that an EIR analyze a "no project" alternative (CEQA Guidelines, Section 15126.6(e)). Where, as here, this alternative means a proposed project would not proceed, the discussion "[sh]ould compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved" (Id. at (e)(3)(B)).

CEQA Guidelines also require that the environmentally superior alternative be designated. If the alternative with the least environmental impact is the No Project Alternative, then the EIR must also designate the next most environmentally superior alternative.

The three alternatives are as follows:

- **No Project Alternative.** Under the No Project Alternative, the RAAP site would retain its existing zoning designations and land uses. Since the existing structures could be leased in its current condition, without any further discretionary approval from the City, this alternative assumes re-occupancy of the existing buildings in their current condition.
- **Reduced Density Alternative.** This alternative would reduce the intensity of proposed land uses in order to reduce impacts to air quality, cultural resources, noise, and traffic. This alternative would also prohibit demolition of the existing structures, which contribute to the eligibility of a historic district, to avoid impacts to cultural resources.
- **Reconfigured Site Plan Alternative.** This alternative would reconfigure the site in order to reduce impacts to biological resources and cultural resources. Specifically, the existing structures would not be demolished, and new buildings would have smaller footprints and heights compared to the proposed project.

B. Comparison of Alternatives

Table 5-1 presents a comparative summary of the alternatives considered in this analysis. Each alternative is analyzed against the impact factors considered for the Specific Plan, according to whether it would have a mitigating or adverse effect. The basis for the determinations presented in Table 5-1 is presented in the next section of this chapter, where each of the topics listed is evaluated for each alternative.

TABLE 5-1 **COMPARISON OF ALTERNATIVES**

Topic	No Project Alternative	Reduced Density Alternative	Reconfigured Site Plan Alternative
Aesthetics	-	0	0
Agriculture and Forestry Resources	+	0	0
Air Quality	++	+	0
Biological Resources	+	+	+
Cultural Resources	++	++	++
Geology and Soils	--	0	0
Greenhouse Gas Emissions	+	+	0
Mineral Resources	0	0	0
Hazards and Hazardous Materials	0	+	+
Hydrology and Water Quality	-	+	+
Land Use and Planning	-	0	0
Noise	++	+	0
Population, Housing, and Employment	0	0	0
Public Services	+	+	0
Recreation	0	0	0
Transportation and Traffic	++	+	+
Utilities and Service Systems	+	0	0
Project Objectives	--	++	++

++ Substantial improvement compared to the Specific Plan.
+ Insubstantial improvement compared to the Specific Plan.
0 Similar to the Specific Plan.
- Insubstantial deterioration compared to the Specific Plan.
-- Substantial deterioration compared to the Specific Plan.

C. No Project Alternative

1. Principal Characteristics

Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, under the No Project Alternative, the RAAP site would retain its existing zoning designations and land uses. Since the existing structures (673,625 square feet of industrial uses) could be leased in its current condition, without any further discretionary approval from the City, this alternative assumes re-occupancy of the existing buildings in their current condition. Additionally, remediation activities are planned for the future, and these will continue.

2. Impact Discussion

a. Aesthetics

Implementation of the Specific Plan would result in changes to the visual character of the RAAP site that would be considered less than significant through the implementation of Specific Plan policies and reliance on policies in the Riverbank General Plan. The No Project Alternative would not result in any significant visual changes to the project site and the site would maintain the buffers of fallow grass fields, security fencing, and industrial warehouse character. Future development of the site under the Specific Plan would improve the visual characteristics of the RAAP site through landscaping and gateway features. As a result, the No Project Alternative would result in an *insubstantial deterioration* when compared to the Specific Plan.

b. Agriculture and Forestry Resources

The RAAP site does not contain any forestry resources, therefore changes under the Specific Plan and the No Project Alternative would be considered the same. The conversion of on-site farmland under the Specific Plan is considered to be less-than-significant given the location of the site and other factors such as water availability and surrounding uses. The No Project Alternative proposes no changes to the existing site that would change the land uses and would therefore be considered an *insubstantial improvement.*

c. Air Quality

Implementation of the Specific Plan would result in significant and unavoidable impacts related to the construction and operation of future projects, including project-generated increases in traffic. The No Project Alternative would result in continued use of the RAAP site, including new employees traveling to the site and emissions associated with allowable uses on the site. Since future conditions would not change to the extent as they would under Specific Plan, the No Project Alternative would be a *substantial improvement* when compared to the Specific Plan.

d. Biological Resources

Implementation of the Specific Plan would result in a potential impact to biological resources in the Specific Plan Area. These impacts would be reduced to a less than significant level through existing General Plan policies and federal and State regulations and a limited number of new policies proposed in the Specific Plan. Additionally, the mitigation measures are included to reduce the impacts to animal species during construction and demolition activities. The No Project Alternative may result in disturbances within the project site, but the overall area within the project site would not be substantially altered. Therefore, the No Project Alternative would be considered an *insubstantial improvement* when compared to the Specific Plan.

e. Cultural Resources

Implementation of the Specific Plan would result in significant and unavoidable impact to cultural resources because individual structures that could contribute to the eligibility of a historic district would be removed as projects are constructed. The No Project Alternative would not result in changes to the RAAP site that would require demolition of existing structures and, therefore, the No Project Alternative would be considered a *substantial improvement* when compared to the Specific Plan.

f. Geology and Soils

Implementation of the Specific Plan would result in potential impacts related to construction on expansive soils that would be reduced to a less-than-

significant level through policies contained in the Specific Plan and existing policies and regulations. If the existing buildings were not constructed to accommodate the conditions, they would be susceptible to damage from the expansive soils. New structures under the Specific Plan would be required to comply with building code regulations to avoid the impact. Therefore, this alternative is considered a *substantial deterioration* compared to the Specific Plan.

g. Greenhouse Gas Emissions

Implementation of the Specific Plan would result in an increase in GHG emissions resulting from the development and operation of projects under the Specific Plan. The utilization of the RAAP site under the No Project Alternative would result in an increase in GHG emissions, but the intensity of use would not match that of the implementation of the Specific Plan. Therefore, the No Project Alternative would be an *insubstantial improvement* when compared to the Specific Plan.

h. Mineral Resources

Implementation of the Specific Plan would result in construction of new facilities on portions of the RAAP site that are not currently developed. However, because no mineral resources are known to exist within the RAAP site, and the surrounding land uses are not compatible for the extraction of mineral resources, the Specific Plan would result in a less-than-significant impact on mineral resources. The No Project Alternative would not result in construction on undeveloped portions of the site. However, as mentioned above, due to no known mineral resources within the RAAP site and conflicting land uses, the No Project Alternative would have *the same potential impact* when compared to the Specific Plan.

i. Hazards and Hazardous Materials

Implementation of the RAAP Specific Plan would result in an increase in the use, storage, and transport of hazardous materials and activities associated with safety hazards and hazardous materials sites. The potential impacts related to hazards and hazardous materials would be reduced to a less-than-

significant level through compliance with existing General Plan policies and federal and State regulations. Planned remediation activities would continue under the No Project Alternative. However, as discussed in the Chapter 4.9, Hazards and Hazardous Materials, of this EIR, there are several locations within the RAAP site that require evaluation and possible remediation. Because implementation of the Specific Plan would require remediation activities to continue, and additional areas would need to be remediated, overall, the No Project Alternative would have *the same potential impact* when compared to the Specific Plan

j. Hydrology and Water Quality

Implementation of the RAAP Specific Plan would result in increased impervious surfaces, and consequently increase surface runoff, but all surface runoff from the site would be captured and treated onsite, complying with applicable State and local regulations. As a result, the Specific Plan would not substantially increase off-site surface runoff and degrade water quality. In comparison, under the No Project Alternative, untreated stormwater would continue to flow off site, if not at a higher rate, resulting in degrading water quality conditions. Therefore, the No Project Alternative would be considered an *insubstantial deterioration* in relation to the Specific Plan.

k. Land Use and Planning

Implementation of the RAAP Specific Plan would create new office and industrial uses but would not result in land use conflicts or exacerbate existing conflicts between land uses in the Plan Area and on surrounding properties. The No Project Alternative would also not create land use conflicts. However, this alternative would not meet some of the goals of the Economic Development Element of the General Plan, which call for creating jobs and income growth for local residents. Additionally, continuing operation of the existing industrial use without providing landscaped buffers, which are proposed under the Specific Plan, may increase conflicts with surrounding residential properties. Therefore, the No Project Alternative would be an *insubstantial deterioration* compared to the Specific Plan.

l. Noise

Implementation of the RAAP Specific Plan would increase noise levels due to construction activities, noise-generating land uses, and increased volumes of traffic. While the noise impacts related to construction activities and noise-generating land uses could be reduced to less-than-significant levels after mitigation, traffic-related noise impacts would be unavoidable. In comparison, the No Project Alternative would not introduce any uses or traffic that could increase existing noise level to the extent as they would under the Specific Plan. Therefore, the No Project Alternative would be a *substantial improvement* over the Specific Plan.

m. Population, Housing and Employment

Implementation of the RAAP Specific Plan would not directly induce population growth because the Plan would not include residential development. The Specific Plan would cause indirect population growth through the creation of jobs both during the construction and operational phases of the Plan. However, this would not cause a substantial and unplanned level of growth, resulting in a less-than-significant impact. The No Project Alternative would not result in a substantial change to population or housing, and therefore would not cause a substantial and unplanned level of growth. Because neither the Specific Plan nor the No Project Alternative would result in significant impacts to population or housing, the No Project Alternative would have *the same potential impact* when compared to the Specific Plan.

n. Public Services

Implementation of the RAAP Specific Plan would result in an indirect increase in population, a direct increase in service population, and an increased demand for public services. Project impacts associated with fire protection services would be potentially significant but mitigable. Impacts to other public services would be less than significant. Conversely, the No Project Alternative would not increase population or result in an increase in demand for public services. Therefore, the No Project Alternative would be considered an *insubstantial improvement* over the Specific Plan.

o. Recreation

Implementation of the RAAP Specific Plan would result in an indirect increase in population and an increased demand for parks and recreational facilities. However, the increased demand would not be substantial enough to require construction or expansion of recreational facilities. Additionally, the Specific Plan would incorporate plazas, green spaces, and pedestrian areas into site design to mitigate any potential impacts. The No Project Alternative would not increase population or result in an increase in demand for parks and recreational facilities. Overall, because neither the Specific Plan nor the No Project Alternative would result in significant impacts to parks and recreational facilities, the No Project Alternative would have *the same potential impact* when compared to the Specific Plan.

p. Transportation and Traffic

Implementation of the RAAP Specific Plan would increase the number of vehicle trips in the area and result in significant and unavoidable impacts related to increased truck traffic and level of service (LOS) standards. In comparison, the No Project Alternative would not increase the number of vehicle trips in the area to the extent that would result in significant traffic impacts. Overall, because the No Project Alternative would avoid the significant impacts of the Specific Plan, the No Project Alternative would be considered a *substantial improvement*.

q. Utilities and Service Systems

Implementation of the RAAP Specific Plan would increase demand for utilities and service systems, particularly requiring improvements of stormwater facilities. The impacts to stormwater facilities would be less-than-significant after mitigation. The No Project Alternative would not result in an increase in employment population to the extent that would occur under the Specific Plan, and therefore would not have the same effect on water supply, wastewater services, and solid waste disposal. Because the No Project Alternative would not have the same utility and service system demands as buildout of the Specific Plan, the No Project Alternative would be considered an *insubstantial improvement* when compared to the Specific Plan.

D. Reduced Density Alternative

1. Principal Characteristics

This alternative would lessen the intensity of the proposed land uses in the Specific Plan roughly by 30 percent. Under this alternative, development of 83,300 square feet of commercial/retail, 988,000 square feet of industrial, and 81,600 square feet of R&D/office uses would be allowed on the project site, creating new jobs in an amount ranging between 579 and 1,158. Less intense uses onsite would be attributed to a combination of smaller building footprints and lower building heights than under the Specific Plan. The reduction of development intensity would potentially reduce impacts related to air quality, noise, and traffic. This alternative would also prohibit demolition of the existing structures, which contribute to the eligibility of a historic district, to avoid impacts to cultural resources.

2. Impact Discussion

a. Aesthetics

Implementation of the RAAP Specific Plan would result in changes to the visual character of the RAAP site that would be considered less than significant through the implementation of Specific Plan policies and reliance on Riverbank General Plan policies. The Reduced Density Alternative would result in lower building heights than under the Specific Plan. However, the reduced height would not result in a substantial difference in regard to visual impact. The General Plan policies and the policies proposed by the Specific Plan that seek to improve the visual quality of the Plan Area would also be in effect under this alternative. Future development of the site under both the Specific Plan and this alternative would improve the visual characteristics of the RAAP site through landscaping and gateway features. Overall, this alternative would have *the same potential impact.*

b. Agriculture and Forestry Resources

The RAAP site does not contain any forestry resources, therefore changes under the Specific Plan and the Reduced Density Alternative would be considered the same. The conversion of on-site farmland under both the Specific Plan and this alternative is considered to be less-than-significant given the lo-

cation of the site and other factors such as water availability and surrounding uses. Overall, this alternative would have *the same potential impact* when compared to the Specific Plan.

c. Air Quality

Implementation of the RAAP Specific Plan would result in significant and unavoidable impacts related to construction and operation of future projects. The Reduced Density Alternative would result in less development on the site, consequently fewer employees traveling to the site and emissions associated with allowable uses, and therefore fewer air quality impacts would occur. As a result, the Reduced Density Alternative would be an *insubstantial improvement* when compared to the Specific Plan.

d. Biological Resources

Implementation of the RAAP Specific Plan would result in potential impacts to biological resources in the Plan Area. These impacts would be reduced to a less than significant level through conformance with existing General Plan policies and federal and State regulations and a limited number of new policies proposed in the Specific Plan. Additionally, mitigation measures are included to reduce the impacts to animal species, such as special-species bats, during construction and demolition activities. The Reduced Density Alternative may result in disturbances within the project site, but would not allow demolition of the existing structures where the maternity roosts of special-species bats are potentially present. Additionally, similar to the Specific Plan, compliance with federal, State, and local regulations, new policies proposed in the Specific Plan, as well as mitigation measures would reduce the other potential impacts to less-than-significant levels. Therefore, the Reduced Density Alternative would be considered an *insubstantial improvement* when compared to the Specific Plan.

e. Cultural Resources

Implementation of the Specific Plan would result in a significant and unavoidable impact to cultural resources because individual structures that could contribute to the eligibility of a historic district would be removed as projects

are constructed. The Reduced Density Alternative would not involve demolition of existing structures and therefore, would not result in a significant and unavoidable impact. Overall, the Reduced Density Alternative would be considered a *substantial improvement.*

f. Geology and Soils

Implementation of the Specific Plan would have potential impacts related to expansive soils that would be reduced to less than significant level through policies contained in the Specific Plan and existing policies and regulations. Although the Reduced Density Alternative would result in less development onsite, this alternative would have *the same potential impact* due to the underlying geologic conditions.

g. Greenhouse Gas Emissions

Implementation of the Specific Plan would result in an increase in GHG emissions resulting from the development and operation of projects under the Specific Plan. The Reduced Density Alternative would result in less development, and therefore less GHG emissions associated with the development and operation of projects would occur. Overall, the Reduced Density Alternative would be *an insubstantial improvement* when compared to the Specific Plan.

h. Mineral Resources

Implementation of the Specific Plan would result in the construction of new facilities on portions of the project site that are not currently developed. However, given that no mineral resources are known to exist within the project site, and that the surrounding land uses are not compatible for the extraction of mineral resources, the Specific Plan would result in a less-than-significant impact on mineral resources. The Reduced Density Alternative would also result in construction on undeveloped portions of the site although with lower intensity compared to the Specific Plan. However, as mentioned above, due to no known mineral resources within the RAAP site and conflicting land uses, the Reduced Density Alternative would have *the same potential impact.*

i. Hazards and Hazardous Materials

Implementation of the RAAP Specific Plan would result in an increase in the use, storage, and transport of hazardous materials and activities associated with safety hazards and hazardous materials sites. These potential impacts related to hazards and hazardous materials would be reduced to a less-than-significant level through existing General Plan policies and federal and State regulations. In comparison, under the Reduced Density Alternative, the hazardous materials sites would not be redeveloped or demolished and therefore would not pose the risk of releasing hazardous materials. Overall, the Reduced Density Alternative would be an *insubstantial improvement* when compared to the Specific Plan.

j. Hydrology and Water Quality

Implementation of the RAAP Specific Plan would result in an increase in impervious surfaces and, consequently, stormwater runoff, but all surface runoff from the site would be captured and treated onsite, complying with applicable State and local regulations. As a result, the Specific Plan would not substantially increase off-site surface runoff or degrade water quality. The Reduced Density Alternative would increase surface runoff rates but not to the extent as they would under the Specific Plan because of smaller building footprints. Similar to the Specific Plan, all surface runoff from the site would be captured and treated onsite through compliance with applicable State and local regulations. Overall, because the Reduced Density Alternative would result in less amount of stormwater runoff that would be captured and treated onsite, this alternative would be considered an *insubstantial improvement* in relation to the Specific Plan.

k. Land Use and Planning

Implementation of the RAAP Specific Plan would create new office and industrial uses but would not result in land use conflicts or exacerbate existing conflicts between land uses in the Plan Area and on surrounding properties. Similarly, the Reduced Density Alternative would neither create land use conflicts nor exacerbate existing conflicts. Both the Specific Plan and this alternative would meet the Economic Development Element of the General

Plan goals, which call for creating jobs and income growth for local residents although this alternative would bring fewer jobs than the Specific Plan. Overall, the Reduced Density Alternative would have *the same potential impact* with regard to land use and planning.

l. Noise

Implementation of the RAAP Specific Plan would increase noise levels due to construction activities, noise-generating land uses, and increased volumes of traffic. While the noise impacts related to construction activities and noise-generating land uses could be reduced to less-than-significant levels after mitigation, traffic-related noise impacts would be unavoidable. In comparison, the Reduced Density Alternative would introduce less intense uses and therefore less traffic that could increase the existing noise level to the extent as they would under the Specific Plan. Therefore, the Reduced Density Alternative would be an *insubstantial improvement* over the Specific Plan.

m. Population, Housing and Employment

Implementation of the RAAP Specific Plan would not directly induce population growth but would cause indirect population growth through the creation of jobs. Nevertheless, the Specific Plan would not result in a significant impact because the Plan would not cause a substantial and unplanned level of growth. Similar to the Specific Plan, the Reduced Density Alternative would cause indirect population growth through the creation of jobs, which although would be fewer than under the Specific Plan due to less development. Because neither the Specific Plan nor the Reduced Density Alternative would result in significant impacts to population or housing, the Reduced Density Alternative would have *the same potential impact* when compared to the Specific Plan.

n. Public Services

Implementation of the RAAP Specific Plan would result in an indirect increase in population, a direct increase in service population, and therefore an increased demand for public services. Project impacts associated with fire protection services would be potentially significant but mitigable. Impacts to

other public services would be less than significant. The Reduced Density Alternative would bring less service population than under the Specific Plan, and therefore less demand for public services would occur. Overall, the Reduced Density Alternative would be considered an *insubstantial improvement* over the Specific Plan.

o. Recreation

Implementation of the RAAP Specific Plan would result in an indirect increase in population and an increased demand for parks and recreational facilities. However, the increased demand would not be substantial enough to require construction or expansion of recreational facilities. The Reduced Density Alternative would bring less service population than under the Specific Plan, and therefore less demand for parks and recreational facilities would occur. Overall, because neither the Specific Plan nor the Reduced Density Alternative would result in significant impacts to parks and recreational facilities, the Reduced Density Alternative would have *the same potential impact* when compared to the Specific Plan.

p. Transportation and Traffic

Implementation of the RAAP Specific Plan would increase the number of vehicle trips in the area and result in significant and unavoidable impacts related to increased truck traffic and level of service (LOS) standards. The Reduced Density Alternative would also increase the number of vehicle trips in the area up to but not to the extent that would occur under the Specific Plan due to less intense development. Overall, because the Reduced Density Alternative could potentially avoid some of the significant impacts of the Specific Plan, this alternative would be considered an *insubstantial improvement.*

q. Utilities and Service Systems

The Specific Plan would increase demand for utilities and service systems, particularly requiring improvements of stormwater facilities. The impacts to stormwater facilities would be less than significant after mitigation. The Reduced Density Alternative would also increase demand for utilities and service systems in the area but not to the extent that would occur under the Spe-

cific Plan due to less intense development. Although the Reduced Density Alternative would generate less demand for utilities and service systems than the Specific Plan, the increased demand would still necessitate improvements to stormwater facilities. Therefore, the Reduced Density Alternative would have *the same potential impact* when compared to the Specific Plan.

E. Reconfigured Site Plan Alternative

1. Principal Characteristics

This alternative would reconfigure the site plan in order to avoid the significant impacts associated with biological resources and cultural resources. Under this alternative, no development would occur in the northern part of the Plan Area, including the North End Cap, wetland areas, and the existing detention pond. The proposed uses in the northern part would be distributed throughout the Plan Area, except for the area with existing structures. Because of site constraints, especially for industrial uses, the overall development intensity would be marginally reduced, and slightly less industrial and somewhat increased R&D development than the Specific Plan would be allowed: 119,000 square feet of commercial/retail; 1,199,800 square feet of industrial; and 120,000 square feet of R&D/office uses. Nevertheless, this alternative is expected to create a similar amount of jobs ranging between 827 and 1,654 as under the Specific Plan. Demolition of existing structures would be prohibited under this alternative to reduce potential impacts on animal species, hazardous materials, and historic resources.

2. Impact Discussion

a. Aesthetics

Implementation of the Specific Plan would result in changes to the visual character of the RAAP site that would be considered less than significant through the implementation of Specific Plan policies and reliance on Riverbank General Plan policies. The Reconfigured Site Plan Alternative may result in higher building heights in the western and southern parts than under the Specific Plan. However, the increased height would not result in significant visual impacts because development under this alternative would

also comply with the General Plan policies and the policies proposed by the Specific Plan that seek to improve the visual quality of the Plan. Future development of the site under both the Specific Plan and this alternative would improve the visual characteristics of the RAAP site through landscaping and gateway features. Overall, this alternative would have *the same potential impact.*

b. Agriculture and Forestry Resources

The RAAP site does not contain any forestry resources, therefore changes under the Specific Plan and the Reconfigured Site Plan Alternative would be considered the same. The conversion of on-site farmland under both the Specific Plan and this alternative is considered to be less-than-significant given the location of the site and other factors such as water availability and surrounding uses. Overall, this alternative would have *the same potential impact* when compared to the Specific Plan.

c. Air Quality

Implementation of the Specific Plan would result in significant and unavoidable impacts related to the construction and operation of future projects, including project-generated increases in traffic. The Reconfigured Site Plan Alternative would result in a similar level of development on the site, and therefore similar levels of impacts to air quality would occur. Overall, this alternative would have *the same potential impact* when compared to the Specific Plan.

d. Biological Resources

Implementation of the Specific Plan would result in a potential impact to biological resources in the Specific Plan Area. These impacts would be reduced to a less-than-significant level through existing General Plan policies and federal and State regulations and a limited number of new policies proposed in the Specific Plan. Additionally, the mitigation measures are included to reduce the impacts to animal species during construction and demolition activities. The Reconfigured Site Plan Alternative would not disturb the northern portion of the site where wetlands and potential species may reside. In addition, this alternative would not involve demolition of the existing structures

where the maternity roosts of special-species bats are potentially present. As a result, the Reconfigured Site Plan Alternative would avoid potential impacts that may occur under the Specific Plan and would be considered an *insubstantial improvement* when compared to the Specific Plan.

e. Cultural Resources

Implementation of the Specific Plan would result in a significant and unavoidable impact to cultural resources because individual structures that could contribute to the eligibility of a historic district would be removed as projects are constructed. The Reconfigured Site Plan Alternative would avoid demolition of existing structures and therefore would not result in a significant and unavoidable impact related to the eligibility of a historic district. In addition, new construction would occur outside of the area that could contribute to the eligibility of a historic district. Overall, the Reconfigured Site Plan Alternative would be considered a *substantial improvement.*

f. Geology and Soils

Implementation of the Specific Plan would result in potential impacts related to expansive soils that would be reduced to less than significant level through General Plan policies and existing State and local regulations. Similar to the Specific Plan, the Reconfigured Site Plan Alternative would result in intensified development onsite and the potential impacts related to expansive soils would be reduced to less than significant level through applicable policies and regulations. Therefore, this alternative would have *the same potential impact* when compared to the Specific Plan.

g. Greenhouse Gas Emissions

Implementation of the Specific Plan would result in an increase in GHG emissions resulting from the development and operation of projects under the Specific Plan. The Reconfigured Site Plan Alternative would result in a similar level of development in the Plan Area, and therefore similar amount of GHG emissions associated with the development and operation of projects would occur. Therefore, this alternative would have *the same potential impact* when compared to the Specific Plan.

h. Mineral Resources

Implementation of the Specific Plan would result in construction of new facilities on portions of the project site that are not currently developed. However, because no mineral resources are known to exist within the project site, and the surrounding land uses are not compatible for the extraction of mineral resources, the Specific Plan would result in a less-than-significant impact on mineral resources. The Reconfigured Site Plan Alternative would also result in construction on undeveloped portions of the site except for the northern portion of the site. Nevertheless, as mentioned above, due to no known mineral resources within the RAAP site and conflicting land uses, the Reconfigured Site Plan Alternative would have *the same potential impact.*

i. Hazards and Hazardous Materials

Implementation of the RAAP Specific Plan would result in an increase in the use, storage, and transport of hazardous materials and activities associated with safety hazards and hazardous materials sites. The potential impacts related to hazards and hazardous materials would be reduced to a less-than-significant level through existing General Plan policies and federal and State regulations. In comparison, under the Reconfigured Site Plan Alternative, the hazardous materials sites would not be redeveloped or demolished and therefore would not pose the risk of releasing hazardous materials. Overall, the Reconfigured Site Plan Alternative would be an *insubstantial improvement* when compared to the Specific Plan.

j. Hydrology and Water Quality

Implementation of the RAAP Specific Plan would result in an increase in impervious surfaces and, consequently, stormwater runoff, but all surface runoff from the site would be captured and treated onsite, complying with applicable State and local regulations. As a result, the Specific Plan would not substantially increase off-site surface runoff or degrade water quality. In comparison, because the Reconfigured Site Plan Alternative would remain the northern portion of the site undeveloped, this alternative would result in less impervious surfaces than the Specific Plan. Consequently, this alternative would not increase surface runoff rates to the extent as they would under the

Specific Plan. Overall, because of less stormwater runoff generated under the Reconfigured Site Plan Alternative, this alternative would be considered an *insubstantial improvement* in relation to the Specific Plan.

k. Land Use and Planning

Implementation of the RAAP Specific Plan would create new office and industrial uses but would not result in land use conflicts or exacerbate existing conflicts between land uses in the Plan Area and on surrounding properties. Similarly, the Reconfigured Site Plan Alternative would neither create land use conflicts nor exacerbate existing conflicts. Both the Specific Plan and this alternative would meet the Economic Development Element of the General Plan goals, which call for creating jobs and income growth for local residents. Therefore, this alternative would have *the same potential impact* with regard to land use and planning.

l. Noise

Implementation of the RAAP Specific Plan would increase noise levels due to construction activities, noise-generating land uses, and increased volumes of traffic. While the noise impacts related to construction activities and noise-generating land uses could be reduced to less-than-significant levels after mitigation, traffic-related noise impacts would be unavoidable. The Reconfigured Site Plan Alternative would also increase overall noise levels in the area although impacts to the southern portion of the site would be greater than the northern portion due to different development intensities. The traffic-related noise impacts would remain significant and unavoidable. Therefore, this alternative would have *the same potential impact* when compared to the Specific Plan.

m. Population, Housing and Employment

Implementation of the RAAP Specific Plan would not directly induce population growth but would cause indirect population growth through the creation of jobs. Nevertheless, the Specific Plan would not result in a significant impact because the Specific Plan would not cause a substantial and unplanned level of growth. The Reconfigured Site Plan Alternative would cause indirect

population growth through the creation of jobs at the same level as the Specific Plan. Because neither the Specific Plan nor the Reconfigured Site Plan Alternative would result in significant impacts to population or housing, the Reconfigured Site Plan Alternative would have *the same potential impact* when compared to the Specific Plan.

n. Public Services

Implementation of the RAAP Specific Plan would result in an indirect increase in population, a direct increase in service population, and therefore an increased demand for public services. Project impacts associated with fire protection services would be potentially significant but mitigable. Impacts to other public services would be less than significant. The Reconfigured Site Plan Alternative would result in a similar increase of service population as the Specific Plan, and therefore a similar demand for public services would occur. Overall, the Reconfigured Site Plan Alternative would have *the same potential impact* when compared to the Specific Plan.

o. Recreation

Implementation of the RAAP Specific Plan would result in an indirect increase in population and an increased demand for parks and recreational facilities. However, the increased demand would not be substantial enough to require construction or expansion of recreational facilities. The Reconfigured Site Plan Alternative would bring a similar increase in population but would result in less demand for parks and open space than the Specific Plan due to the undeveloped lands in the northern portion of the site. Overall, because neither the Specific Plan nor the Reconfigured Site Plan Alternative would result in significant impacts to parks and recreational facilities, the Reconfigured Site Plan Alternative would have *the same potential impact* when compared to the Specific Plan.

p. Transportation and Traffic

The Specific Plan would increase the number of vehicle trips in the area and result in significant and unavoidable impacts related to increased truck traffic and level of service (LOS) standards. The Reconfigured Site Plan Alternative

would generate a similar number of vehicle trips in the area, although, because of the reconfigured development patterns, its traffic flows would be different from those under the Specific Plan. Consequently, the locations of impacted areas would differ from the proposed project. Less industrial development under this alternative would generate slightly fewer truck trips than under the Specific Plan. Because this alternative could lessen some of the significant impacts related to truck traffic, the Reconfigured Site Plan Alternative would be considered an *insubstantial improvement* when compared to the Specific Plan.

q. Utilities and Service Systems

Implementation of the Specific Plan would increase demand for utilities and service systems, particularly requiring improvements of stormwater facilities. The impacts to stormwater facilities would be less than significant after mitigation. The Reconfigured Site Plan Alternative would increase demand for utilities and service systems at a similar level as the Specific Plan. Therefore, the Reconfigured Site Plan Alternative would have *the same potential impact* when compared to the Specific Plan.

F. Ability to Meet Project Objectives

This section describes how each alternative would meet the Specific Plan objectives, described in Chapter 3 of this Draft EIR, and repeated below for reference:

The stated objectives of the Specific Plan are to:

- Define the vision for the future of the Specific Plan Area. (The Specific Plan envisions the Plan Area to be a thriving industrial park that is occupied by a variety of manufacturing businesses.)
- Create goals and policies intended to facilitate achievement of the vision.
- Designate land for uses that implement the vision.

- Create development standards for the form and physical design of new development within the Specific Plan Area.
- Provide recommendations for circulation and infrastructure improvements required to support future buildout of the Specific Plan Area.
- Provide an implementation strategy for achieving the goals in the Specific Plan and putting the policies in the Specific Plan into action.

a. No Project Alternative

Under the No Project Alternative, the Specific Plan would not be implemented, and therefore this alternative does not meet any of the objectives.

b. Reduced Density Alternative

Under this alternative, less development and fewer jobs than under the Specific Plan would occur. However, this would still satisfy the Specific Plan's vision, which calls for a thriving industrial park that is occupied by a variety of manufacturing businesses. This alternative would incorporate applicable goals, policies, development standards, improvement strategies, and land use designations of the Specific Plan. Therefore, this alternative would meet all of the objectives.

c. Reconfigured Site Plan Alternative

This alternative would provide slightly less amount of development and jobs as envisioned in the Specific Plan. This alternative would also incorporate applicable goals, policies, development standards, improvement strategies, and land use designations of the Specific Plan. Therefore, this alternative would meet all of the objectives.

G. Environmentally Superior Alternative

In addition to the discussion and comparison of impacts of the Specific Plan and the alternatives, Section 15126.6 of the State CEQA Guidelines requires that an "environmentally superior" alternative be selected and the reasons for such a selection be disclosed. In general, the environmentally superior alter-

native is the alternative that would be expected to generate the least environmental impact. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets Specific Plan objectives.

As shown in Table 5-1, the Reduced Density Alternative would have the fewest environmental impacts as compared to the other two alternatives, and would therefore be considered the environmentally superior alternative.

The City notes, that where, as is the case here, an EIR determines that the potential adverse impacts of a project can be avoided or substantially lessened by mitigation measures, the Lead Agency is not required to make any findings regarding the feasibility of proposed alternatives. (*Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 379.)

6 CEQA Required Assessment Conclusions

This chapter provides an overview of the impacts of the RAAP Specific Plan (the Plan) based on the analyses presented in Chapters 4 and 5 of this Draft EIR. The topics covered in this Chapter include growth inducement, unavoidable significant impacts, and significant irreversible changes. A more detailed analysis of the effects the Plan would have on the environment and proposed mitigation measures to minimize significant impacts is provided in Chapters 4.1 through 4.17.

A. Growth Inducement

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth-inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the Plan's potential to create such growth inducements. Not all aspects of growth inducement are negative; rather, negative impacts associated with growth inducement occur only where the Plan growth would cause adverse environmental impacts.

Implementation of the Plan is not expected to directly induce growth because it is not building any housing, although it will provide substantial employment opportunities compared to those currently available in the Plan Area. However, some employment growth for the area is anticipated by the Riverbank General Plan.

While development of the Plan would not add any housing, it would add industrial, commercial, and office uses which could indirectly increase the demand for housing not only within the Plan Area but throughout Riverbank by increasing the number of employees in the area that may want to live near work. However, it is unknown whether future employees of the Plan Area would already be Riverbank residents, whether they would relocate to Riverbank from other places, or whether they would already be people who

live elsewhere and commute to the site. Although buildout of the Plan would result in the extension of infrastructure, this expansion is to replace existing infrastructure currently serving the site, and this growth, including the additional infrastructure, was planned for and envisioned under the Riverbank General Plan.

Development of the Plan would involve construction activities that could generate temporary employment opportunities; it is unlikely that construction workers would relocate to Riverbank as a result implementation of the Plan. Thus, development of the Plan would not be considered growth-inducing from an employment perspective.

B. Unavoidable Significant Impacts

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. This section lists the impacts for the proposed project that were found to be significant and unavoidable. More information on these impacts is found in Chapter 4 of this Draft EIR.

Impact AQ-1: Construction of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to an existing or projected air quality violation. Because of the project size and the uncertainty of the construction schedule, construction period emissions would be considered to remain *significant* with mitigation.

Impact AQ-2: Operation of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to existing or projected air quality violations. This would be considered a *significant* impact.

Impact CUL-1: Implementation of the RAAP Specific Plan would alter the significance of an historic resource. By removing individual structures that contribute to the eligibility of an historic district, the RAAP's ability to convey its importance to local and national history is significantly altered, the

resource may not be eligible for inclusion on the CRHR. This would be considered a *significant* impact.

Impact NOISE-2: Existing noise environments at outdoor activity areas of residences along Claus Road are greater than 65 dBA L_{dn}, and would increase by more than 1.5 dBA as a result of transportation noise following implementation of the Specific Plan. This would be considered a *significant* impact.

Impact NOISE-4: Traffic volume increases in the vicinity of the Specific Plan vicinity will result with the development of the plan area and other planned developments in the southeast portion of the City of Riverbank. This would be considered a *significant* impact.

Impact TRANS-3: Future development within the RAAP area would add truck traffic to intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road. As these intersections do not currently accommodate the turning movements of large trucks, this is considered a potentially *significant* impact based on the significance criteria.

Impact TRANS-5: The Claribel Road/Coffee Road intersection is projected to operate at LOS F during the AM and LOS E during the PM peak hours. The addition of Project traffic would worsen deficient operations in both peak hours. This is considered *significant* based on the significance criteria, as LOS C is the standard for this intersection.

Impact TRANS-6: The Claribel Road/Oakdale Road intersection is projected to operate at LOS F during the AM and PM peak hours. The addition of Project traffic would worsen LOS F operations. This is considered *significant* based on the significance criteria, as LOS D is the standard for this intersection.

C. Significant Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which implementation of the Plan would commit nonrenewable resources to uses that future generations would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

1. Changes in Land Use that Commit Future Generations

Buildout of the Plan would result in the conversion of some agricultural land currently used for growing crops to developed area for business, commercial, and industrial uses. However, as the Plan Area has already been planned for future growth and is adjacent to a developed area, implementation of the Plan is not expected to result in any land use changes that would commit future generations to uses that are not already prevalent and/or planned for in the Plan Area and its immediate vicinity.

2. Irreversible Damage from Environmental Accidents

Potential environmental accidents of concern include those that would have adverse effects on the environment or public health due to the nature or quantity of material released during an accident and the receptors exposed to that release. Demolition and construction activities associated with development of the Plan would involve some risk for environmental accidents. However, these activities would be monitored by City of Riverbank, State, and federal agencies, and would follow professional industry standards for safety and construction. Additionally, although the land uses proposed by the Plan may include some uses or activities that could contribute to or be the cause of significant environmental accident, existing regulations at the City, State, and federal levels would limit the potential for accidents and the effects. As a result, the Plan would not pose a substantial risk of environmental accidents.

3. Large Commitment of Nonrenewable Resources

Consumption of nonrenewable resources involves issues related to increased energy consumption, conservation of agricultural lands, and lost access to

mining reserves. Development of the Plan would require water, electric, and gas service, and resources for construction, and the ongoing operation of the Plan would involve the use of nonrenewable resources. Construction and ongoing maintenance of the Plan would irreversibly commit some materials and nonrenewable energy resources. Materials and resources used would include, but are not limited to, nonrenewable and limited resources such as oil, gasoline, sand and gravel, asphalt, and steel. These materials and energy resources would be used for infrastructure development, transportation of people and goods, and utilities. During the operational phase of the Plan (post-construction), energy sources including oil and gasoline would be used for lighting, heating, and cooling of businesses, and transportation of people to and from the Plan Area.

Implementation of the Plan, however, would include several features that would offset or reduce the need for nonrenewable resources. The Plan would be required to comply with all applicable building and design requirements, including those set forth in Title 24 relating to energy conservation. In compliance with CALGreen, the State's Green Building Standards Code, the Plan would be required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

Although the construction and ongoing operation of the Plan would involve the use of nonrenewable resources, through the inclusion of energy-conserving Plan features, compliance with applicable standards and regulations, and implementation of mitigation measures, the Plan would not represent a large commitment of nonrenewable resources.

The Plan Area contains agricultural land, but its proposed future non-agricultural use represents a commitment of non-renewable resources. The Plan Area does not provide access to a mining reserve, so it would not affect those natural resources.

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CITY OF RIVERBANK

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1 INTRODUCTION

A. Purpose of the Environmental Impact Report

This document provides responses to comments received on the Draft Environmental Impact Report (Draft EIR) for the proposed RAAP Specific Plan (the Project), and it includes revisions to the text and analysis in the Draft EIR made in response to comments. The Draft EIR identified significant impacts associated with the proposed Project, and examined alternatives and recommended mitigation measures that could avoid or reduce potential impacts.

This document, together with the Draft EIR and all Appendices, will constitute the Final EIR if the City of Riverbank Planning Commission certifies it as complete and adequate under the California Environmental Quality Act (CEQA).

B. Environmental Review Process

The City of Riverbank is the lead agency for this EIR.

According to CEQA, lead agencies are required to consult with public agencies having jurisdiction over a proposed project, and to provide the general public and project applicant with an opportunity to comment on the Draft EIR. This Final EIR has been prepared to respond to comments received on the Draft EIR and to clarify any errors, omissions, or misinterpretations of discussions of findings in the Draft EIR. The Draft EIR was made available for public review on March 27, 2013. The Draft EIR was distributed to local and State responsible and trustee agencies and the general public was advised of the availability of the Draft EIR through public notice published in the local newspaper and on the City website. The 45-day public comment period ended on May 20, 2013. Copies of all written comments received on the Draft EIR are contained in this document. These comments and responses to these comments are set out in Chapter 5, Comments and Responses, of this Final EIR.

C. Document Organization

This document is organized into the following chapters:

- **Chapter 1: Introduction.** This chapter discusses the use and organization of this Final EIR.

- **Chapter 2: Report Summary.** This chapter is a summary of the findings of the Draft and the Final EIR. It has been reprinted from the Draft EIR with necessary changes made in this Final EIR.
- **Chapter 3: Revisions to the Draft EIR.** Additional corrections to the text and graphics of the Draft EIR are contained in this chapter. Underline text represents language that has been added to the EIR; text with ~~strikethrough~~ has been deleted from the EIR.
- **Chapter 4: List of Commenters.** Names of organizations and individuals who commented on the Draft EIR are included in this chapter.
- **Chapter 5: Comments and Responses.** This chapter contains reproductions of the letters received from agencies and the public on the Draft EIR. The chapter also contains responses keyed to the comments which precede them.

2 REPORT SUMMARY

This summary presents an overview of the analysis contained in Chapter 4.0, Environmental Evaluation. CEQA requires that this chapter summarize the following: 1) areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; 4) implementation of mitigation measures; and 5) alternatives to the project.

A. Project under Review

This Draft EIR provides an assessment of the potential environmental consequences of adoption and implementation of the RAAP Specific Plan (the Plan). This includes development of the site according to adopted land use policies, and development of supporting transportation and utilities infrastructure.

B. Areas of Controversy

The following is a discussion of issues that are likely to be of particular concern to agencies and interested members of the public during the environmental review process. This list does not necessarily identify all areas of concern, but attempts to capture those that are likely to generate greatest interest based on the input received during the scoping process.

- **Air Quality.** The Plan Area is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). As such, this Draft EIR will need to examine existing and post-project emissions of criteria, nuisance odors, and potential health impacts associated with toxic air contaminants. This Draft EIR must also discuss the methodology, model assumptions, inputs and results relating to air quality impacts; emission projections of Plan components, and Plan design elements, mitigation measures, and whether the Plan would cumulatively contribute to a net increase of criteria pollutants or precursor for which the area is in non-attainment. Further, the Plan itself would be subject to a variety of SJVAPCD rules and regulations.
- **Biological Resources**. The Plan Area includes riparian habitats and wetlands that could be impacted by buildout under the Specific Plan. There are also several special-status animals on the RAAP site, such as Swainson's hawks and the western burrowing owl. Potential impacts to these species should be addressed.

- **Hazards and Hazardous Materials.** The Plan Area has industrial sites that have been contaminated by past activities. Impact to humans from the redevelopment of these parcels should be addressed.
- **Hydrology and Water Quality.** The Plan Area includes Oakdale Irrigation District lateral, which eventually drains into the Modesto Irrigation District main canal. Runoff impacts and impacts to drainage facilities are concerns that have been requested to be addressed in the EIR.
- **Transportation and Traffic.** Implementation of the Plan would result in new vehicle and truck trips to and from the RAAP site, which have the potential to impact operations at intersections and along roadway segments in the surrounding area, including the State Highway System. In addition, the Plan would increase vehicular traffic volumes at at-grade highway-rail crossings. The Draft EIR will need to consider mitigation measures to reduce impacts on traffic safety, particularly at railroad crossings.

C. Alternatives to the Project

According to CEQA, an EIR must evaluate a reasonable range of feasible alternatives to the proposed project that would achieve most of the basic project objectives and would avoid or substantially lessen any of the significant impacts of the project. Chapter 5 compares the impacts of three alternatives to those of the project, the No Project Alternative, the Reduced Density Alternative, and the Mixed Use Alternative. The Reduced Density Alternative would be the environmentally superior alternative.

- **Alternative 1 – No Project Alternative.** Under this alternative, which is required to be analyzed under CEQA, the RAAP site would retain its existing zoning designations and land uses. Since the existing structures could be leased in their current condition, without any further discretionary approval from the City, this alternative assumes re-occupancy of the existing buildings in their current condition.
- **Alternative 2 – Reduced Density Alternative.** This alternative would reduce the intensity of proposed land uses in order to reduce impacts to air quality, cultural resources, noise, and traffic. This alternative would also prohibit demolition of the existing structures, which contribute to the eligibility of a historic district, to avoid impacts to cultural resources.

- **Alternative 3 – Reconfigured Site Plan Alternative.** This alternative would reconfigure the site in order to reduce impacts to biological resources and cultural resources. Specifically, the existing structures would not be demolished, and new buildings would have smaller footprints and heights compared to the proposed project.

D. Summary of Impacts and Mitigation Measures

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed Plan has the potential to generate environmental impacts in a number of areas that could be significant:

- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Noise
- Public Services
- Transportation and Traffic

In Sections 4.1 through 4.17, significant impacts that have been identified for the Plan are numbered. Each numbered impact is considered significant prior to mitigation, unless it is specifically identified as less than significant. Mitigation measures have been suggested to reduce the effects of significant impacts. As shown in Table 2-1, most of the significant impacts would be reduced to a less-than-significant level if the mitigation measures recommended in this report were implemented. However, in some instances the mitigation measure that is recommended would not be sufficient to reduce a significant impact to a less-than-significant level (for example, Impact AIR-1); these impacts are identified as significant and unavoidable after mitigation.

CEQA allows environmental issues for which there is no likelihood of a significant impact to be "scoped out" during the EIR scoping process, and not analyzed further in the EIR. However, all issues have been analyzed in this Draft EIR.

Table 2-1 presents a summary of impacts and mitigation measures identified in this report. It is organized to correspond with the environmental issues discussed in Chapter 4.

The table is arranged in four columns: 1) environmental impacts, 2) significance prior to mitigation, 3) mitigation measures, and 4) significance after mitigation. A series of mitigation measures is noted where more than one measure may be required to achieve a less-than-significant impact. For a complete description of potential impacts and suggested mitigation measures, please refer to the specific discussions in Chapter 4. Additionally, this summary does not detail the timing of mitigation measures. Timing will be further detailed in the mitigation monitoring and reporting program.

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Aesthetics			
Since there are no significant impacts related to aesthetics as a result of the RAAP Site Specific Plan, no mitigation measures are required.			
Agriculture and Forestry Resources			
Since there are no significant impacts related to agricultural and forest resources as a result of the Plan, no mitigation measures are required.			
Air Quality			
AQ-1: Construction of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to an existing or projected air quality violation. Because of the project size and the uncertainty of the construction schedule, construction period emissions would be considered to remain significant with mitigation.	S	AQ-1a: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1a through AQ-1d. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with construction period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	SU
		AQ-1b: SJVAPCD Regulation VIII Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the RAAP Specific Plan ~~The following controls~~ shall be required to ~~be~~ implemented ~~at all construction sites~~ the following controls: ♦ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover; ♦ All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant;	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
AQ-1 *continued*		♦ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking; ♦ With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition; ♦ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained; ♦ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden);* ♦ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant; ♦ Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and ♦ Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.	
		AQ-1c: Enhanced Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the Specific Plan, ~~T~~the following measures shall~~should~~ be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements): ♦ Limit traffic speeds on unpaved roads to 15 mph; and ♦ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
AQ-1 *continued*		AQ-1d: Additional Control Measures. The following control measures are strongly encouraged by the SJVAPCD at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions: ♦ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; ♦ Install wind breaks at windward side(s) of construction areas; ♦ Suspend excavation and grading activity when wind exceeds 20 mph *(Regardless of wind speed, and owner/operator must comply with Regulation VIII's 20 percent opacity limitation.)*; and ♦ Limit area subject to excavation, grading, and other construction activity at any one time.	
		AQ-1e: The following measures may be implemented to mitigate emissions from construction equipment exhaust: ♦ Use of alternative-fueled or catalyst-equipped diesel construction equipment; ♦ Minimize idling time (e.g. 5-minute maximum); ♦ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; ♦ Replace fossil-fueled equipment with electrically-driven equivalents (provided they are not run via a portable generator set); ♦ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; and ♦ Implement activity management (e.g. rescheduling activities to reduce short-term impacts).	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
AQ-2: Operation of the Specific Plan could emit significant levels of criteria pollutants, potentially contributing to existing or projected air quality violations.	S	AQ-2: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g., improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with operational period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Each individual project, including those projects allowed by right, that introduce significant sources of air pollutant emissions or stationary sources of TACs shall complete separate ambient air quality analysis and health risks assessments to ensure that violations of ambient air quality standards do not occur, including an analysis of cumulative emissions from the RAAP Specific Plan. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	SU
Biological Resources			
BIO-1: Buildout of the Plan would involve the demolition or redevelopment of buildings on the RAAP site where the maternity roosts of Townsend's big-eared bats are potentially present. This could result in the destruction, disturbance, or interference with the maternity roots of a special-species bat.	S	BIO-1: Implementation of the Plan shall avoid disturbance to the maternity roosts of special-status bats during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than two weeks in advance of any demolition or construction activity involving concrete breaking or similarly noisy or intrusive activities, that would commence during the pup-rearing season (April 15 through August 31), or winter hibernacula season	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

5553

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
BIO-1 *continued*		(October 15 through March 1, depending on weather conditions) a qualified bat biologist, acceptable to the CDFG, shall conduct pre-demolition surveys of all potential special-status bat breeding habitat in the vicinity of the planned activity. Depending on the survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats: 1. If active roosts are identified during pre-construction surveys, a no disturbance buffer will be created by the qualified bat biologist, in consultation with the CDFG, around active roosts during the breeding season. The size of the buffer will take into account factors such as the following: ♦ Noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction activity; ♦ Distance and amount of vegetation or other screening between the project site and the roost; and ♦ Sensitivity of individual nesting species and the behaviors of the bats. 2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required. 3. Pre-construction surveys are not required for demolition or construction activities scheduled to occur during the non-breeding and winter hibernacula season (September 1 through October 15, and March 1 through April 15). 4. Noisy demolition or construction activities as described above (or activities producing similar substantial increases in noise and activity levels in the vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees would be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above. 5. Bat roosts initiated during demolition or construction activities are presumed to be unaffected by the activity, and a buffer is not necessary.	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
BIO-1 *continued*		6. Destruction of roosts of special-status bats and overt interference with roosting activities of special-status bats shall be prohibited. 7. The noise control procedures for maximum noise, equipment, and operations identified in Chapter 4.12, Noise, of this EIR shall be implemented. Implementation of the above mitigation measure would reduce potential impacts to the maximum extent practicable.	
Cultural Resources			
CUL-1: Implementation of the RAAP Specific Plan would alter the significance of an historic resource. By removing individual structures that contribute to the eligibility of an historic district, the RAAP's ability to convey its importance to local and national history is significantly altered, the resource may not be eligible for inclusion on the CRHR.	S	CUL-1: Prior to the demolition of buildings and structures comprising the eligible district, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation shall be conducted for the affected structures. HABS/HAER recordation could include archiving of original plans, undertaking archival research for preparation of a report, making measured drawings, and completing a photographic study of the structures.	SU
Geology and Soils			
Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.			
Greenhouse Gas Emissions			
GHG-1: Development and operation of the Specific Plan could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	S	GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate BPS will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	LTS

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LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Mineral Resources			
There are no significant impacts related to agricultural resources as a result of the proposed Plan. Therefore no mitigation measures are required.			
Hazards and Hazardous Materials			
Since there are no significant impacts related to hazardous materials as a result of the Plan, no mitigation measures are required.			
Hydrology and Water Quality			
There are no significant impacts related to hydrology and water quality as a result of the proposed Plan. Therefore no mitigation measures are required.			
Land Use and Planning			
Since there are no significant impacts related to land use as a result of the Plan, no mitigation measures are required.			
Noise			
NOISE-1: The nearest residential land uses are 110 feet west of the plan area, across Claus Road. Noise levels resulting from on-site activities may exceed City standards for stationary noise sources, as described in General Plan Tables NOISE-2 and NOISE-3 (Tables 4.12-6 and 4.12-7 in this EIR), at nearby residential receivers if the noise generated by such uses are not regulated or adequately mitigated.	S	NOISE-1: In order to reduce noise generated by activities occurring within the RAAP site, the following mitigation measures shall be implemented: ♦ Project level acoustical analyses shall be constructed for noise-generating land uses proposed as part of the Specific Plan. Exterior noise levels at residential land uses interfacing active parks, commercial land uses, or industrial land uses shall be maintained in accordance with the standards presented in the General Plan and Municipal Code. ♦ Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and evening hours (7 a.m. to 10 p.m.). ♦ Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers. ♦ Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
NOISE-2: Existing noise environments at outdoor activity areas of residences along Claus Road are greater than 65 dBA L_{dn}, and would increase by more than 1.5 dBA as a result of transportation noise following implementation of the Specific Plan.	S	NOISE-2: Noise reduction methods shall be implemented to reduce generated by activities resulting from the Specific Plan. These measures shall include, but are not limited to the following: ♦ Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors. ♦ New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. ♦ Sound insulation treatments to affected buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces. ♦ Installing traffic calming measures to slow traffic along Claus Road could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.	SU
NOISE-3: While the duration and phasing of construction activities for the Specific Plan is unknown at this time, it is conceivable that a particular receiver or group of receivers would be subject to construction noise levels in excess of 60 dBA L_{eq} and the ambient by 5 dBA for durations exceeding one construction season.	S	NOISE-3: To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the plan area: ♦ Limit construction to the hours of 7:00 a.m. to 6:30 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays. ♦ Equip all internal combustion engine-driven equipment with mufflers which are in good condition and appropriate for the equipment. ♦ Unnecessary idling of internal combustion engines should be strictly prohibited. ♦ Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA. ♦ Utilize "quiet" air compressors and other stationary noise sources where technology exists. ♦ Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.	LTS

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
NOISE-3 *continued*		♦ Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site. ♦ The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. ♦ Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.	
NOISE-4: Traffic volume increases in the vicinity of the Specific Plan vicinity will result with the development of the plan area and other planned developments in the southeast portion of the City of Riverbank.	S	NOISE-4: Implement Mitigation Measure NOISE-2.	SU
Population and Housing			
Since there are no significant impacts related to cultural resources as a result of the Plan, no mitigation measures are required.			
Public Services			
PUB-1: In order to improve response times and ISO ratings, a new fire station is required either in the Bruinville planning area or in the RAAP Plan Area. The addition of a new Fire Station on the east side of the City near the RAAP would be necessary as the proposed Plan builds out. The new station would need at least nine personnel hired for staffing purposes (3 per shift), and the station would need a new Type 1 Engine, Type 3 Engine, and a Water Tender for apparatus. This would be a *significant* impact.	S	PUB-1: The City shall coordinate with Stanislaus Consolidated Fire Protection District to ensure fair share development fees for future development resulting from the implementation of the RAAP Specific Plan to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate~~The additional personnel, station, and apparatus shall be incorporated into the RAAP Specific Plan and have benchmarks for when the staffing and facilities are added~~.	LTS
Recreation			
Since there are no significant impacts related to parks and recreational facilities as a result of the Plan, no mitigation measures are required.			

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
Transportation and Traffic			
TRANS-1: The Claribel Road/Coffee Road intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.	S	TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Coffee Road intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Coffee Road intersection to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stanislaus County plans to signalize this intersection as part of the Claribel Road widening project. Funding for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.	LTS
TRANS-2: The Claribel Road/Roselle Avenue intersection operates at LOS F during both the AM and PM peak hours and signal warrants are met during both peak hours in the Existing Condition. The addition of project traffic would worsen operations and increase delay.	S	TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Roselle Avenue intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Roselle Avenue intersection to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.	LTS
TRANS-3: Future development within the RAAP area would add truck traffic to intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/ Patterson Road. As these intersections do not currently accommodate the turning movements of large trucks, this is considered a potentially significant impact based on the significance criteria.	S	TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements ~~at the intersections identified above, though the payment of local and regional traffic fees, that improve turning radii for large trucks~~to provide adequate turning radii in conformance with STAA requirements at intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road, though the payment of local and regional traffic fees. No other improvements ~~have been identified for~~ are needed to mitigate project impacts at these intersections.	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-4: Future Development in the RAAP Specific Plan area could substantially increase hazards due to a design feature or incompatible uses.	S	TRANS-4: Although construction impacts are expected to be temporary and less-than-significant, for all future development in the plan area, the following is recommended to minimize the effects of construction related activity: ♦ Prepare a construction management plan, including: • Project staging plan to maximize on-site storage of materials and equipment. • A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes. • Permitted construction hours. • Location of construction staging. • Provision of on-site parking for all construction employees, site visitors, and inspectors. • Provisions for street sweeping to remove construction related debris on public streets.	LTS
TRANS-5: The Claribel Road/Coffee Road intersection is projected to operate at LOS F during the AM and LOS E during the PM peak hours. The addition of project traffic would worsen deficient operations in both peak hours. This is considered significant based on the significance criteria, as LOS C is the standard for this intersection.	S	TRANS-5: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS C would be achieved. Alternatively, intersection improvements beyond the cross-section identified in the General Plan could be provided to improve peak hour operations, such as dual left-turn lanes and right-turn only lanes on all approaches. This improvement would improve the service level to LOS E during the AM peak hour and LOS D during the PM peak hour, as shown on Table 4.16-10. These service levels are considered deficient for this intersection. Given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	SU
TRANS-6: The Claribel Road/Oakdale Road intersection is projected to operate at LOS F during the AM and PM peak hours. The addition of project traffic would worsen LOS F operations. This is considered significant based on the significance criteria, as LOS D is the standard for this intersection.	S	TRANS-6: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS D would be achieved. Alternatively, construction of additional improvements at this intersection that would result in acceptable service levels, including dual left-turn pockets on the northbound, westbound, and eastbound approaches could be constructed. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown in Table 10 of the TIA, reducing this impact to a less-than-significant level. However, given the uncer-	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		tainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	
Utilities and Service Systems			
Since there are no significant impacts related to utilities and service systems as a result of the Plan, no mitigation measures are required.			
~~**UTIL-1:** Buildout of the Plan would require improvements to existing stormwater facilities. The existing stormwater pipes have areas where there are improperly functioning gravity systems, cracked or offset joins, or vertical and/or horizontal pipe cracks. Other deficiencies in the existing stormwater system include the squirrel hole in the reservoir and the undersized main line piping. With the existing deficiencies, the proposed Plan would have the potential to increase flooding. This would be a *significant* impact.~~	~~S~~	~~UTIL-1: The Stormwater Master Plan for the proposed Plan recommends the following measures:~~ ~~♦ Manholes should be repaired to ensure the lids seal properly to prevent inflow and infiltration of storm water during rain events.~~ ~~♦ In order to mitigate the possible contamination of polychlorinated biphenyls (PCBs) within the storm drain, one of the following options could be implemented:~~ ~~• Clean and apply a lining or coating to all affected storm drain pipes;~~ ~~• Replace affected storm drain pipes with larger pipes;~~	~~LTS~~
~~UTIL-1 *continued*~~	~~S~~	~~• A combination of lining a portion of the storm drain pipes and replacing other storm drain pipes: this involves adding a second pipe between the north reservoir lift station and the diversion structure located near Gate 10. Also includes replacing storm drain piping, with larger pipe size, from the diversion structure to the Building Group.~~ ~~♦ Current County Standards require new systems to have a capacity to convey storm events equal to the 10-year return period or larger. Lining the interior of affected piping is a cost effective way to mitigate potential contamination of pipes while providing approximately the same (slightly improved) level of service in relation to stormwater conveyance.~~ ~~♦ If there are opportunities to upgrade the lift station pumping capacity in the future, the LRA should use that opportunity to significantly increase lift station capacity. Increasing size (i.e. conveyance capacity) of storm drain piping upstream from the north lift station will not be effective unless the lift station capacity is increased.~~ ~~♦ Improvements to the existing north reservoir should be completed at the LRA's earliest opportunity. The squirrel hole(s) in the reservoir bank should be repaired and the lower outlet valve returned to the normal operating position (i.e. closed). This would allow more storage capacity of the reservoir prior to discharge, which~~	~~LTS~~

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		would allow more time for suspended soils to settle out in stormwater traveling through the reservoir during rainfall events. Currently, the exterior bank slope is approximately 2:1 (horizontal to vertical). The slopes may be reduced as much possible within the constraints of space allotted to the reservoir (i.e. approximately 3:1) to reduce the possibility of the rodent holes extending through the bank. Additionally, the repaired slopes may be hardened with rock or crushed brick to make it more difficult for rodents to penetrate the surface.	
		♦ To determine the performance of the reservoir outlets, a detailed hydraulic analysis of the OID piping would need to be accomplished. The 10-year and 50-year storm events produce approximately 4.0 MGAL and 4.2 MGAL, respectively. Therefore, the combined outlet piping would need to discharge approximately 1.0 to 1.2 MGAL to prevent the reservoir from becoming full and having water overtopping the banks during these types of storm events. In order to discharge 1.2 MGAL, the outlet piping would need to discharge at an average rate of 3.2 cubic feet per second (cfs) over a 24-hour period. This is a relatively small flow rate and most likely the discharge piping connected to the OID piping and overflow piping would prevent the reservoir from reaching maximum capacity during these types of storms events (i.e. approximately 3.2 cfs is the minimum required and unrestricted gravity flow to OID piping would be approximately 10 cfs, if the OID piping was empty and able to accept full gravity flow).	
UTIL-1 *continued*		♦ If the properties around the reservoir are developed, additional analysis to determine the OID piping hydraulic capacity should be conducted and, if needed, the north reservoir should be increased in size to prevent potential flooding of the newly developed sites. By removing the earthen divider and extending the basin to the northeast by approximately 120 feet, the reservoir capacity could be increased to approximately 4.5 MGAL. This would provide the additional capacity necessary to ensure the basin can adequately store stormwater runoff from larger events even if the OID has little or no capacity to receive water from the reservoir outlets.	
		♦ Based on the results of percolation testing, the soils within the site appear to have adequate capacity to infiltrate stormwater directed into basins, swales, or rain gardens. Final design for these areas of the site should include additional percolation testing in order to estimate infiltration rates at the locations and depths of final design basins and other LID components proposed within these areas.	
		♦ Future development should include LID features to the maximum extent practical,	

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TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
		~~and at a minimum LID components (in additional to large infiltration basins) should cover 15 percent of the total site area. This minimum percentage is based on the example site layout conducted as part of this study that incorporates LID features into a practical commercial site layout. The LID components may include, but not be limited to the following:~~ ~~• Shallow infiltration basins~~ ~~• Bioretention basin / rain gardens~~ ~~• Porous concrete within parking stalls~~ ~~• Rainwater harvesting system (cisterns and/or rain barrels)~~ ~~♦ In addition to structural LID components, sites should be designed to minimize continuous impervious surfaces where possible. This includes providing landscaping around buildings and breaks between roadways and sidewalks. This also includes generally reducing the amount of impervious surfaces around sites.~~	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

3 REVISIONS TO THE DRAFT EIR

This chapter presents specific changes to the Draft EIR that are being made in response to comments made by the public. In each case, the revised page and location on the page is presented, followed by the textual or tabular, revision. Double-underline text represents language that has been added to the EIR; text with ~~strikethrough~~ has been deleted from the EIR.

The revisions contained herein merely clarify and amplify the information in the Draft EIR, and none of the revisions constitutes significant changes to the analysis contained in the Draft EIR.

All changes to Chapter 2 of the Draft EIR, including changes to Table 2-1, Summary of Impacts and Mitigation Measures, are included in Chapter 2 of this Final EIR.

Chapter 4.3 Air Quality

Section E.1.d. beginning on page 4.3-32 of the Draft EIR is hereby added as included below. As a part of the text edits below, Figure 4.3-2 and Figure 4.3-3, have been added to the Draft EIR and are also include below. In addition, Appendix B (attached to this Final EIR) has been modified to include additional information pertaining to the Health Risk Assessment.

a. Expose Sensitive Receptors to Substantial Pollutant Concentrations *(LTS)*

The health risk evaluation for the Specific Plan involved the calculation of future diesel particulate matter (DPM) emissions and associated health risks for on-site vehicle traffic at the project site~~for traffic on Claus Road, which is the main road adjacent to the project site~~. It was assumed that the primary contributor to potential health risks from on-site traffic would be from DPM emissions from diesel-fueled trucks. Emissions were calculated using the latest version of the CARB EMFAC2011 emissions model. Potential cancer risks for residents in the vicinity of the project site ~~along Claus Road~~ were calculated using health risk assessment methods recommended by the California Office of Environmental Health Hazard Assessment[1] (OEHHA) and the SJVAPCD.[1]. The health risk assessment method includes calculation of ambient DPM concentrations at residential receptor loca-

[10] OEHHA 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment. August 2003.

[11] San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling,* Draft 01/07 Rev 2.0.

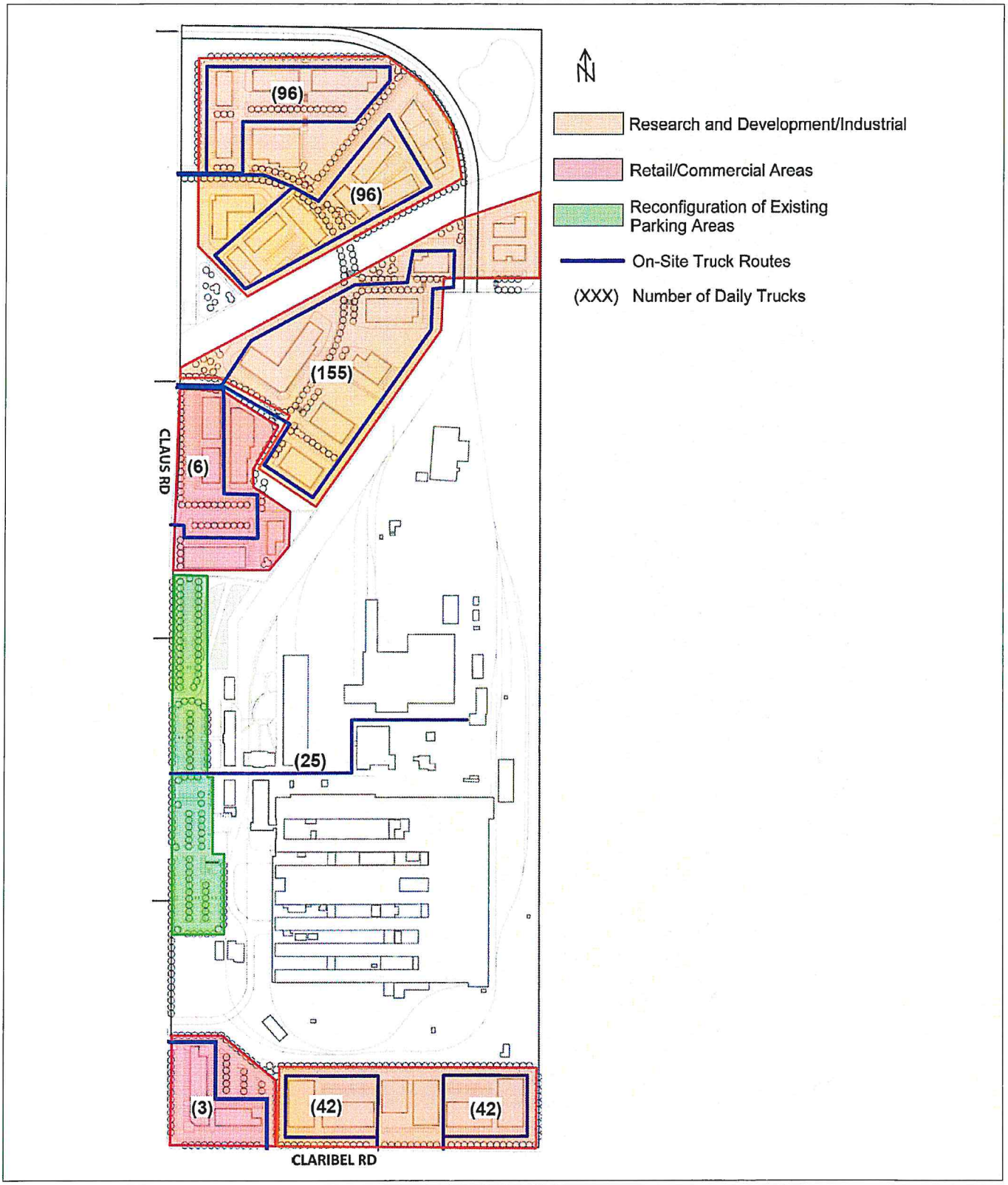
tions using an air quality dispersion model, and then calculating cancer risks using the modeled concentrations along with appropriate DPM-specific risk factors.

Roadway and receptor coordinates, meteorological data, traffic volumes, and the emission factors were used with the AERMOD air quality dispersion model to predict annual DPM concentrations from roadway traffic which were then used to calculate lifetime cancer risks at the residential receptor locations.

i. Traffic Emissions

The project would include areas for research and development (R&D) and industrial uses at the northern and southern portions of the site, retail development adjacent to Claus road near the central and southern portions of the site, and realignment of existing parking areas in the central portion of the site near Claus road. These areas are identified in Figures 4.3-2 and 4.3-3. Also shown on the figures are potential truck routes within each area that were used for modeling.

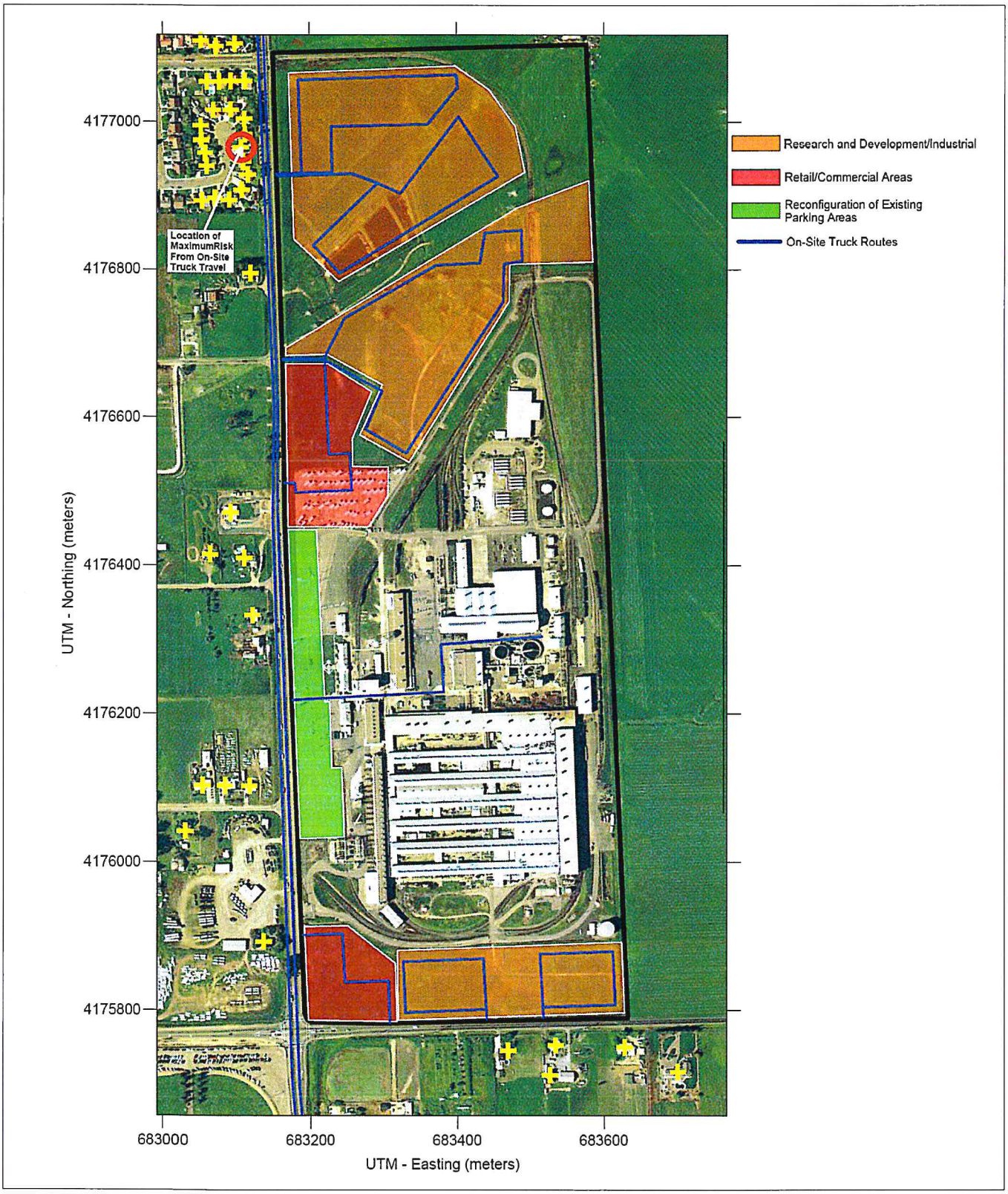
DPM emissions for ~~traffic on Claus Road~~on-site truck travel and idling were calculated using emission factors from the CARB EMFAC2011 emissions model with default information for Stanislaus County along with future traffic volumes and vehicle mixes on Claus Road. EMFAC2011 is the most recent version of the CARB motor vehicle emission factor model. Emission factors were developed for the year 2020 assuming that all trucks are heavy-duty diesel-fueled trucks and would be traveling at 15 miles per hour. For truck idle emissions, each truck was assumed to idle for 10 minutes while at the project site (5 minutes per truck trip). Based on traffic data for the project, as described in Section 4.16, Transportation and Traffic, there would be about 465 trucks accessing the site daily, or 930 daily truck trips. These truck trips were distributed among the different development areas of the project and associated truck routes based on the projected size and type of new land use. Figure 4.3-1 includes the estimated number of daily trucks traveling in each project area. Emissions from these trucks were then used in the air quality dispersion modeling of on-site truck travel to predict DPM concentrations at residences in the vicinity of the project and along the Claus Road~~using the projected mix of cars and trucks traveling on Claus Road north and south of the project site. Based on traffic data for the project there would be more traffic on Claus Road north of the site than south of the site. The average daily traffic volumes were estimated as 4,957 passenger vehicles and 428 trucks, or 54 percent of the total traffic, traveling north of the project site on Claus Road, and 4,223 passenger vehicles and 428 trucks, or 46 percent of the total traffic, traveling on Claus~~



Source: Illingworth_&_Rodkin, 2013.

FIGURE 4.3-2

PROJECT SITE, DEVELOPMENT AREAS, ON-SITE TRUCK ROUTES, AND DAILY TRUCK TRAFFIC



Source: Illingworth_&_Rodkin, 2012.

FIGURE 4.3-3

PROJECT SITE, ON-SITE TRUCK ROUTES FOR DISPERSION MODELING, AND NEARBY RECEPTOR LOCATIONS

~~Road south of the site. In calculating emissions it was assumed that all trucks would be heavy duty trucks and the passenger vehicles would be comprised of light duty autos and trucks. An average travel speed of 45 mph (the posted speed limit on Claus Road) was assumed for all vehicles and used with the EMFAC2011 model in calculating DPM emission factors. These emissions were then used in the air quality dispersion modeling of vehicles traveling on Claus Road to predict DPM concentrations at residences along the roadway~~. The DPM emission factor calculations are shown in Appendix B.

ii. Roadway Dispersion Modeling

Dispersion modeling of roadway DPM emissions was conducted using the EPA's AERMOD dispersion model. This model is recommended by the SJVAPCD for this type of analysis. The AERMOD model predicts pollutant concentrations at receptors located in areas of flat or complex terrain from a variety of emission source types including point, area, volume, and line sources. Emissions from these source types can be continuous or vary by hour, day of the week, month, or season. For this analysis the model was run using regulatory default dispersion options and rural dispersion coefficients due to the rural nature of the project area. Although~~Since~~ there is little variation in terrain elevations in the project area, the model was run ~~in flat terrain mode~~using USGS digital terrain data for the project area.

A 5-year set of hourly meteorological data (2005 - 2009) from the Modesto Airport, located about 6.25 miles south-southwest of the project site, was used in the modeling.~~,~~ These meteorological data were prepared by the SJVAPCD.~~,~~[12] ~~from the Modesto Airport, located about 6.25 miles south-southwest of the project site, was used in the modeling.~~ Other inputs to the model included road geometry, receptor locations, and hourly emission rates. The truck~~Vehicle~~ emissions were modeled as line sources (a series of volume sources along a path) along ~~Claus Road~~the on-site truck travel routes shown in Figure 4.3-2. ~~In the vicinity of the project site, Claus Road is a two-lane road and was modeled using one line source per travel direction. Since the traffic volumes and associated emissions on Claus Road are different north and south of the project site, two roadway segments were used in the modeling. One road segment represents traffic from the project site north on Claus Road to Kentucky Avenue and the other segment represents Claus Road from of the project site south to just beyond Plainview Road.~~ Emission source parameters used in modeling these line sources were consistent with SJVAPCD Air Quality Modeling Guidance.[12] The trucks were modeled as traveling at 15 mph with an emission

[12] http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

release height of 6 feet and the road widths were model at 12 feet. Since the actual locations where trucks may be idling at the site are unknown, the truck idle emissions were included in the emissions for modeling truck travel.

Locations of residential receptors in the project area and along Claus Road were identified from aerial images and included in the modeling as locations for the model to calculate annual average DPM concentrations. ~~Sixty-five~~Seventy-two residential receptors were identified and included in the modeling. A receptor height of 1.5 meters (4.9 feet) was used for all receptors modeled. An aerial view showing the project site, roadway segments modeled, and the locations of the residential receptors is provided in Figure 4.3-1. The maximum-modeled DPM concentration ~~occurred along the road segment south of the project site, north of Plainview Road,~~of 0.0103 µg/m^3 occurred west of the northern portion of the project site along Claus Road at UTM coordinates 683,228.5 meters east, 4,175260.6 meters north and is shown in Figure 4.3-1. This is the maximum exposed individual (MEI) location. Inputs used for the modeling are included in Appendix B.

iii. Cancer Risk Prediction

Cancer risk ~~to residents near Claus Road from roadway~~to off-site residents from on-site truck DPM emissions were assessed following the SJVAPCD recommended methods and their significance evaluated based on the SJVAPCD threshold of an incremental cancer risk of ten excess cases per million at the Maximally Exposed Individual (MEI). Exceeding this threshold would result in a significant impact. ~~The ten-in-one-million risk level is also used by the Air Toxics "Hot Spots" (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources.~~

Potential cancer risks from inhalation of toxic air contaminants are calculated based on the annual average concentration, an inhalation dose, and the cancer potency of the toxic air contaminant. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on whether the exposure is considered to occur for a residential location, at a workplace, or at a school. For this analysis, potential exposures to DPM concentrations from on-site truck traffic ~~on Claus Road~~ to residents ~~along the roadway~~ were evaluated. For residential exposures, the SJVAPCD recommends using a breathing rate of 393 liters per day per

[13] San Joaquin Valley Air Pollution Control District, *Guidance for Air Dispersion Modeling*, Draft 01/07 Rev 2.0.

kilogram of body weight (L/kg-day). Residential receptors are assumed to be exposed for 24 hours per day for 350 days per year over a 70-year lifetime.

Potential health risks to nearby residents from on-site truck~~residents along Claus Road from roadway~~ DPM emissions were evaluated assuming constant exposure to DPM concentrations ~~based on emissions during 2020~~ for an entire 70-year lifetime exposure period (SJVAPCD recommended method) based on emissions during 2020. The maximum increased MEI cancer risk for a 70-year exposure was 4.3~~6.5~~ in one~~a~~ million. Details on the cancer risk calculations are included in Appendix B.

Under the SJVAPCD CEQA Guidelines~~GAMAQI~~, an incremental risk of greater than ten cases per million at the MEI would be considered a significant impact. The increased cancer risk associated with on-site truck traffic ~~along Claus Road~~ is less than 10 in a million, and therefore would be a *less-than-significant* impact.

Section E.2. beginning on page 4.3-37 of the Draft EIR is hereby added as follows:

2. Cumulative Impacts

The proposed Plan would not contribute to a regional impact by increasing the rate of vehicle use at a greater rate than population growth. However, build out of the Specific Plan with mitigation may have NOx emissions that could exceed the GAMAQI thresholds. That would mean the project could have a cumulatively considerable increase in air pollutant emissions that may contribute to future violations of ozone ambient air quality standards. As a result, this cumulative impact would be considered *significant.*

In addition to assessing potential health risks from the project's on-site DPM emissions from truck travel, potential risks from project trucks traveling off-site were evaluated and the combined cancer risk from on-site and off-site truck DPM emissions identified.

As discussed in the DEIR, cancer risks from project truck travel along Claus Road was evaluated. The maximum cancer risk from truck travel on Claus Road occurred south of the project site at a residence on the east side of Claus Road, north of Plainview Road. The maximum cancer risk at this location was 6.5 in one million.

In order to assess the combined cancer risks from both on-site and off-site project truck traffic, the on-site emission sources, discussed above, and the off-site emis-

sion sources, discussed in the DEIR, were modeled with the AERMOD model to identify the location and magnitude of the maximum DPM concentration and associated maximum cancer risk at a residential receptor. The modeling was conducted using the same methodology as described above. The maximum combined impact from on-site and off-site truck traffic occurred at the same location, discussed above, where the maximum impact from the on-site truck travel occurred. The total cancer risk from on-site and off-site truck DPM emissions was 9.0 in one million. Cumulative cancer risk at this level is considered to be a *less-than-significant impact.*

Mitigation Measure AQ-1a on page 4.3-38 of the Draft EIR, is hereby amended as follows:

Mitigation Measure AQ-1a: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1a through AQ-1d.

Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with construction period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Mitigation Measure AQ-1b on page 4.3-38 of the Draft EIR, is hereby amended as follows:

Mitigation Measure AQ-1b: SJVAPCD Regulation VIII Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the RAAP Specific Plan~~The following controls~~ shall be required to ~~be~~ implement~~ed at all construction sites~~ the following controls:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover;

- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant;
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking;
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition;
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained;
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden)*;
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant;
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Mitigation Measure AQ-1c on page 4.3-39 of the Draft EIR, is hereby amended as follows:

Mitigation Measure AQ-1c: Enhanced Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the Specific Plan, ~~T~~the following measures shall~~should~~ be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):

- Limit traffic speeds on unpaved roads to 15 mph; and
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

Mitigation Measure AQ-2 on page 4.3-41 of the Draft EIR, is hereby amended as follows:

Mitigation Measure AQ-2: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted

methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g., improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with operational period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Each individual project, including those projects allowed by right, that introduce significant sources of air pollutant emissions or stationary sources of TACs shall complete separate ambient air quality analysis and health risks assessments to ensure that violations of ambient air quality standards do not occur, including an analysis of cumulative emissions from the RAAP Specific Plan. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Section B.3.a.iii. on page 4.3-12 of the Draft EIR is hereby added as follows:

iii. Rule 9410 – Employer Based Trip Reduction

The purpose of this rule is reduce vehicle miles traveled from private vehicles used by employees to commute to and from their worksites to reduce emissions of NOx, ROG and particulate matter (PM_{10} and $PM_{2.5}$). The rule applies to employers with at least 100 employees. Employers are required to implement an Employer Trip Reduction Implementation Plan (ETRIP) for each worksite with 100 or more Eligible Employees to meet applicable targets specified in the rule. Employers are required to facilitate the participation of in the development of ETRIPs by providing information to its employees explaining the requirements and applicability of this rule. Employers are required to prepare and submit an ETRIP for each worksite to the District. The ETRIP must be updated annually. Under this rule, employers shall collect information on the modes of transportation used for each Eligible Employee's commutes both to and from work for every day of the Com-

mute Verification Period, as defined in using either the Mandatory Commute Verification Method or a Representative Survey Method. Annual reporting includes the results of the Commute Verification for the previous calendar year along with the measures implemented as outlined in the ETRIP and, if necessary, any updates to the ETRIP.

Table 4.3-2 on page 4.3-13 of the Draft EIR is hereby amended as follows:

Pollutant	Averaging Time	California Standards		National Standards		
		Concentration	Method	Primary	Secondary	Method
...						
Fine Particulate Matter (PM2.5)	24 Hour	--	--	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	~~15 µg/m³~~ 12 µg/m³		

Section Cb.i. beginning on page 4.3-20 of the Draft EIR is hereby amended as follows:

~~The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. The plan was approved by CARB on May 22, 2008 and US EPA on November 9, 2011. This plan will assure that the Valley will attain the 1997 $PM_{2.5}$ standard and make progress toward attaining the new 2006 standards as well as the state standard. The plan uses control measures to reduce NOx, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of the wood-burning rules. Recent and proposed action by CARB to reduce diesel particulate matter emissions from on- and off-road mobiles sources is contained in the plan. Attainment plans for the 2006 $PM_{2.5}$ NAAQS are not required until December 2012.~~The District approved the 2012 PM2.5 Plan on December 20, 2012. The plan was then approved by the California Air Resources Board (ARB) on January 24, 2013. This plan assures the San Joaquin Valley Air Basin will comply with the Environmental Protection Agency (EPA) 2006 PM2.5 standard by the 2019 deadline.

Chapter 4.7 Greenhouse Gas Emissions

Mitigation Measure GHG-1 on page 4.7-17 of the Draft EIR is hereby amended as follows:

Mitigation Measure GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate Best Performance Standards will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Chapter 4.14 Public Services

Mitigation Measure PUB-1 on page 4.16-14 of the Draft EIR is hereby amended as follows:

Mitigation Measure PUB-1: The City shall coordinate with Stanislaus Consolidated Fire Protection District to ensure fair share development fees for future development resulting from the implementation of the RAAP Specific Plan to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate~~The additional personnel, station, and apparatus shall be incorporated into the RAAP Specific Plan and have benchmarks for when the staffing and facilities are added~~.

Chapter 4.16 Transportation and Traffic

Mitigation Measure TRANS-1 beginning on page 4.16-38 of the Draft EIR is hereby amended as follows:

Mitigation Measure TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Coffee Road intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Coffee Road intersection to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stan-

islaus County plans to signalize this intersection as part of the Claribel Road widening project. Funding for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.

Mitigation Measure TRANS-2 on page 4.16-39 of the Draft EIR is hereby amended as follows:

Mitigation Measure TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Roselle Avenue intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Roselle Avenue intersection to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.

Mitigation Measure TRANS-3 on page 4.16-40 of the Draft EIR is hereby amended as follows:

Mitigation Measure TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements ~~at the intersections identified above, though the payment of local and regional traffic fees, that improve turning radii for large trucks~~to provide adequate turning radii in conformance with STAA requirements at intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road, though the payment of local and regional traffic fees. No other improvements ~~have been identified for~~ are needed to mitigate project impacts at these intersections.

Chapter 4.17 Utilities and Service Systems

Section C.2. beginning on page 4.17-28 of the Draft EIR is hereby amended as follows:

In general, under existing conditions, stormwater runoff is collected in numerous inlets located around the site that connect to a main storm drain line. The main storm drain line carries flows towards the north, opposite the surface grade. At Gate 10, flow is directed through a diversion structure. A valve located at the discharge of the diversion structure remains open allowing stormwater runoff to travel

through the diversion structure and down a 36-inch pipe towards a lift station, located adjacent to the north stormwater reservoir. Pumps 1 and 2 of the lift station convey flow into the north reservoir. This reservoir is designed as a detention basin that allows for temporary stormwater runoff to facilitate settling of suspended sediment. ~~Two outlets, with approximately one foot of elevation difference, are provided in the reservoir to discharge water into the Oakdale Irrigation District (OID) 30-inch diameter line that runs parallel to the north side of the reservoir.~~ Between rain events, some water remains in the reservoir, below the outlets, and either evaporates, infiltrates into the ground, or is used by the vegetation that grows in the basin. ~~The lift station located near the reservoir has a third smaller pump that conveys stormwater from the lift station directly to the OID pipe during periods of excessive rain.~~

The discussion of cumulative stormwater impacts on pages 4.17-31 and 4.17-32 of the Draft EIR is hereby amended as follows: 5. Cumulative Impacts

This section analyzes potential impacts to stormwater systems that could occur from the proposed Plan in combination with other reasonably foreseeable projects in the surrounding area. The geographic scope of this analysis is taken as the City of Riverbank SOI, as defined in the Riverbank General Plan.

As described above, all the stormwater from the Plan Area would be treated on-site. Development under the proposed Plan would comply with draft Specific Plan Goal PUB-2 and Policy PUB-3 and includes low impact development and sustainable design approaches for stormwater management. Any new development occurring within the RAAP site would be required to comply with the RAAP Specific Plan as well as the Stormwater Plan prepared for the site. Future conditions within the RAAP site would be evaluated on a project-by-project bases an new development applications are submitted to the City in order to address any project-specific impacts. Because stormwater would be treated on-site and future stormwater would be mitigated as projects come forward, cumulative impacts on stormwater facilities would be considered *less than significant*~~With Mitigation Measure UTIL-1 in place, cumulative impacts to stormwater systems would therefore be *less than significant*~~.

The discussion of stormwater impacts and mitigation measures beginning on page 4.17-32 of the Draft EIR is hereby amended as follows:

6. Impacts and Mitigation Measures

The Specific Plan would not result in any significant impacts to stormwater; therefore, no mitigation measures are necessary~~The following impacts and mitigation measures have been identified with regard to stormwater~~.

~~**Impact UTIL-1:** Buildout of the Plan would require improvements to existing stormwater facilities. The existing stormwater pipes have areas where there are improperly functioning gravity systems, cracked or offset joins, or vertical and/or horizontal pipe cracks. Other deficiencies in the existing stormwater system include the squirrel hole in the reservoir and the undersized main line piping. With the existing deficiencies, the proposed Plan would have the potential to increase flooding. This would be a *significant* impact.~~

~~Mitigation Measure UTIL-1: The Stormwater Master Plan for the proposed Plan recommends the following measures:~~

- ~~Manholes should be repaired to ensure the lids seal properly to prevent inflow and infiltration of storm water during rain events.~~
- ~~In order to mitigate the possible contamination of polychlorinated biphenyls (PCBs) within the storm drain, one of the following options could be implemented:~~
  - ~~Clean and apply a lining or coating to all affected storm drain pipes;~~
  - ~~Replace affected storm drain pipes with larger pipes;~~
  - ~~A combination of lining a portion of the storm drain pipes and replacing other storm drain pipes: this involves adding a second pipe between the north reservoir lift station and the diversion structure located near Gate 10. Also includes replacing storm drain piping, with larger pipe size, from the diversion structure to the Building Group.~~
- ~~Current County Standards require new systems to have a capacity to convey storm events equal to the 10-year return period or larger. Lining the interior of affected piping is a cost effective way to mitigate potential contamination of pipes while providing approximately the same (slightly improved) level of service in relation to stormwater conveyance.~~
- ~~If there are opportunities to upgrade the lift station pumping capacity in the future, the LRA should use that opportunity to significantly increase lift station capacity. Increasing size (i.e. conveyance capacity) of storm drain~~

~~piping upstream from the north lift station will not be effective unless the lift station capacity is increased.~~

- ~~Improvements to the existing north reservoir should be completed at the LRA's earliest opportunity. The squirrel hole(s) in the reservoir bank should be repaired and the lower outlet valve returned to the normal operating position (i.e. closed). This would allow more storage capacity of the reservoir prior to discharge, which would allow more time for suspended soils to settle out in stormwater traveling through the reservoir during rainfall events. Currently, the exterior bank slope is approximately 2:1 (horizontal to vertical). The slopes may be reduced as much possible within the constraints of space allotted to the reservoir (i.e. approximately 3:1) to reduce the possibility of the rodent holes extending through the bank. Additionally, the repaired slopes may be hardened with rock or crushed brick to make it more difficult for rodents to penetrate the surface.~~

- ~~To determine the performance of the reservoir outlets, a detailed hydraulic analysis of the OID piping would need to be accomplished. The 10-year and 50-year storm events produce approximately 4.0 MGAL and 4.2 MGAL, respectively. Therefore, the combined outlet piping would need to discharge approximately 1.0 to 1.2 MGAL to prevent the reservoir from becoming full and having water overtopping the banks during these types of storm events. In order to discharge 1.2 MGAL, the outlet piping would need to discharge at an average rate of 3.2 cubic feet per second (cfs) over a 24-hour period. This is a relatively small flow rate and most likely the discharge piping connected to the OID piping and overflow piping would prevent the reservoir from reaching maximum capacity during these types of storms events (i.e. approximately 3.2 cfs is the minimum required and unrestricted gravity flow to OID piping would be approximately 10 cfs, if the OID piping was empty and able to accept full gravity flow).~~

- ~~If the properties around the reservoir are developed, additional analysis to determine the OID piping hydraulic capacity should be conducted and, if needed, the north reservoir should be increased in size to prevent potential flooding of the newly developed sites. By removing the earthen divider and extending the basin to the northeast by approximately 120 feet, the reservoir capacity could be increased to approximately 4.5 MGAL. This would provide the additional capacity necessary to ensure the basin can adequately store stormwater runoff from larger events even if the OID has little or no capacity to receive water from the reservoir outlets.~~

- ~~Based on the results of percolation testing, the soils within the site appear to have adequate capacity to infiltrate stormwater directed into basins, swales, or rain gardens. Final design for these areas of the site should include additional percolation testing in order to estimate infiltration rates at the locations and depths of final design basins and other LID components proposed within these areas.~~

- ~~Future development should include LID features to the maximum extent practical, and at a minimum LID components (in additional to large infiltration basins) should cover 15 percent of the total site area. This minimum percentage is based on the example site layout conducted as part of this study that incorporates LID features into a practical commercial site layout. The LID components may include, but not be limited to the following:~~
  - ~~Shallow infiltration basins~~
  - ~~Bioretention basin / rain gardens~~
  - ~~Porous concrete within parking stalls~~
  - ~~Rainwater harvesting system (cisterns and/or rain barrels)~~

- ~~In addition to structural LID components, sites should be designed to minimize continuous impervious surfaces where possible. This includes providing landscaping around buildings and breaks between roadways and sidewalks. This also includes generally reducing the amount of impervious surfaces around sites.~~

  ~~Significance After Mitigation: This impact would be *less than significant* after implementation of this mitigation measure.~~

4 LIST OF COMMENTORS

A. Written Comments

Written comments were received from the following agencies, organizations, and individuals. Letters are arranged by category, and then by date received. Letters received after the close of the comment period are listed at the end of their respective categories, in the order received. Each letter listed below has been reproduced and is included in Appendix H.

State Agencies

SA1. Dave Singleton, Program Analyst, State of California, Native American Heritage Commission. March 29, 2013.

SA2. Trevor Cleak, Environmental Scientist, Central Valley Regional Water Quality Control Board. May 6, 2013.

SA3. Tom Dumas, Chief, Office of Metropolitan Planning, State of California, Department of Transportation. May 10, 2013.

SA4. Scott Morgan, Director, State Clearinghouse, State of California, Governor's Office of Planning and Research. May 13, 2013.

Regional Agencies

RA1. Celia Aceves, Risk & Property Analyst, Modesto Irrigation District. May 2, 2013.

RA2. John B. Davids, District Engineer, Oakdale Irrigation District. May 9, 2013.

RA3. Irena Torrey, Bureau Manager, Bureau of Environmental Management, San Francisco Public Utilities Commission. May 13, 2013.

RA4. Shirley Koelmas, Fire Inspector, Stanislaus Consolidated Fire Protection District. May 17, 2013.

RA5. Mark Loeser, Management Consultant, Environmental Review Committee, Stanislaus County. May 20, 2013.

RA6. Dave Warner, Director of Permit Services, San Joaquin Valley Air Pollution Control District. May 20, 2013.

Local Agencies

LA1. Brad Wall, Principal Planner, City of Modesto. May 17, 2013.

5 COMMENTS AND RESPONSES

This chapter includes a reproduction of, and responses to, comments received during the Draft EIR public review period. Comments are presented in their original format in Appendix H, along with annotations that identify each comment letter.

Responses to those individual comments are provided in this chapter alongside the text of each corresponding comments. Comment letters in this chapter follow the same order as listed in Chapter 4 of this Final EIR and are categorized by:

- Written Comments:
  - State Agencies
  - Regional Agencies
  - Local Agencies

Where the same comment has been made more than once, a response may direct the reader to another numbered comment and response. Where a response requires revisions to the Draft EIR, the revisions are explained and shown in Chapter 3 of this Final EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
Native American Heritage Commission		
SA1-1	The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.	This comment provides an introduction to the comment letter, and does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
SA1-2	The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resources, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required: Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources, which we know that it has. The NAHC recommends that known cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report. If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure pursuant to California Government Code Section 6254.10. Contact has been made to the Native American Heritage Commission for a Sacred Lands File Check, and cultural resources have not been identified to your agency. A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter	This comment outlines the steps required to mitigate potential impacts to historical resources. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.	
SA1-3	Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities. Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans. Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.	As discussed on page 4.5-21 of the Draft EIR, although there have been previous ground-disturbing activities within the RAAP Plan Area, and it is unlikely that undiscovered archeological resources are located within the site, it is possible that undiscovered archeological resources are present in the RAAP Plan Area. General Plan Policies CONS 2.1, CONS-2.2, CONS-2.4, and CONS-2.5 address this issue. In addition, Section 5097 of the Public Resources Code specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land, and Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.
Central Valley Regional Water Quality Control Board		
SA2-1	Pursuant to the State Clearinghouse's 27 March 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the Request for Review for the Draft Environmental Impact Report for the Riverbank Army Ammunition Plant Specific Plan Project, located in Stanislaus County. Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.	This comment provides an introduction to the comment letter. No further response is required.
SA2-2	Construction Storm Water General Permit Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities per-	This comments provides a summary of the requirements of the Construction Storm Water General Permit. Construction-related impacts to hydrology are discussed on pages 4.10-8 through 4.10-10 of the Draft EIR. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	formed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.	
SA2-3	Phase I and II Municipal Separate Storm Sewer System (MS4) Permits The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process. For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/. (1) Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.	This comments provides a summary of the requirements of the Phase I and II Municipal Separate Storm Sewer System (MS4) Permits. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
SA2-4	Industrial Storm Water General Permit Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_perm	This comments provides a summary of the requirements of the Industrial Storm Water General Permit. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
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SA2-5	Clean Water Act Section 404 Permit If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.	This comments provides a summary of the requirements of the Clean Water Act Section 404 Permit. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
SA2-6	Clean Water Act Section 401 Permit - Water Quality Certification If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.	This comments provides a summary of the requirements of the Clean Water Act Section 401 Permit. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
SA2-7	Waste Discharge Requirements If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.	This comments provides a summary of waste discharge requirements. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
Department of Transportation		
SA3-1	The California Department of Transportation (Department) appreciates the opportunity to review and comment on the DEIR for the for the RAAP Specific Plan which includes 173 acres. This includes 146 acre primary site of which portions are currently underdeveloped and a 27 acre evaporation pond. The Department has the following comments:	This comment acknowledges that the Department of Transportation has reviewed the EIR and introduces ensuing comments, but does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
SA3-2	I. The existing plus approved/pending projects scenario should be included as part of the scenarios being analyzed.	The Draft EIR considered the impacts of the Project on the existing transportation system as well as the future transportation system considering approved, pending and planned developments over the next 20 to 30 years, consistent with CEQA guidelines. As the project is a Specific Plan to guide future development on the site and no specific projects have been proposed, the level of analysis provided in the Draft EIR appropriately identifies the range of impacts that could occur as the site is developed. As Projects are proposed for the site, additional review may be required, but no Existing Plus Approved scenario will be evaluated at this time.
SA3-3	2. Please provide the electronic files that will be used to analyze the traffic study when the traffic study is submitted.	The TIA was included as Appendix E of the Draft EIR. The Synchro files used in the analysis have been forwarded to the commenter.
SA3-4	3. Various intersections along SR-108 do not meet STAA off-tracking requirements for turning movements. The project needs to consider the impact of any potentially generated STAA truck traffic turning movements at intersections due to its development since this would create a safety issue at these intersections.	The Draft EIR acknowledged that the Project could increase truck traffic through intersections on State Route 108 that do not currently meet STAA requirements and a significant impact was identified, as stated on page 4.16-31. The project is required to pay local and regional fees that would fund improvements to the state highway system and the local street network. Potential improvements to these intersections include minor re-striping, intersection modification and/or pavement widening. The StanCOG 2011 RTP identifies some improvements to the SR 108/First Street intersection and available funding is identified for other various intersection improvements, including development fees that each development would be required to pay. However, as the timing of improving SR-108 intersections is unknown, this impact is considered significant and unavoidable. It is also noted that from the Project site, trucks can access the STAA network via Claribel Road (which becomes State Route 219 at McHenry Avenue) with a full interchange to SR 99. Both SR 219 and SR 99 are designated STAA Routes. Additionally, the noted intersections are approximately 2 miles from the Project site and it is beyond the scope of a single project to modify state highways to meet STAA requirements.
SA3-5	Please refer to the letter to the City of Riverbank dated July 19, 2010 regarding related intersections along SR 108 that do not meet STAA. If a copy is needed for reference, please contact the Joshua Swearingen (contact information below).	The letter dated July 19, 2010 identified the intersections of Patterson Road, Santa Fe Street, First Street and Claus Road with SR 108 as intersections that do not meet STAA requirements for one or more turning movements. The intersections of Patterson Road, First Street and Claus Road with SR 108 were included in the impact analysis. Level of service impacts were not identified at these intersections with the addition of traffic from the Project. The intersec-

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
		tion of Santa Fe Street with SR 108 was not included as the assessment as the project would not add traffic to movements where off-tracking requirements are not met. As noted in the response to comment SA3-4, a significant and unavoidable impact was identified for these intersections for truck movements.
State Clearinghouse		
SA4-1	The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on May 10, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this content package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly. Please note that Section 211 04(c) of the California Public Resources Code states that: "A responsible or other public agency shall only make substantive. comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation." These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly. This letter acknowledges that yon have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.	This comment acknowledges that the Draft EIR was circulated to various State agencies for comment.
Modesto Irrigation District		
RA1-1	Thank you for allowing the District to comment on this referral. Following are the recommendations from our Electrical, Irrigation and	This comment acknowledges that the Modesto Irrigation District has reviewed the Draft EIR and introduces ensuing comments, but the comments does not state a specific concern or

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	Domestic Water Divisions:	question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA1-2	Irrigation - Section 4.17 C of the draft EIR discusses increasing storm water discharge flows into the Oakdale Irrigation District (OID) Riverbank Lateral. The Riverbank Lateral discharges into the Modesto Irrigation District (MID) Main Canal and is subject to a 1942 agreement limiting "irrigation spill, drainage pump discharges and storm and surface water discharges" to maximum total amounts. Any increased discharge from the Riverbank Army Ammunition Plant redevelopment project to OID's Riverbank Lateral would be subject to the constraints imposed in the 1942 agreement.	The City acknowledges that any increased storm water discharge into the OID lateral is subject to the 1942 agreement. In order to address a potentially significant impact resulting from increased storm water originating on the RAAP site, any new development occurring within the RAAP site would be required to comply with the RAAP Specific Plan as well as the Stormwater Plan prepared for the site..
RA1-3	Domestic Water - No comments at this time.	This comments does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA1-4	Electrical - The Electric Division has no objections at this time.	This comments does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA1-5	MID currently has an existing electric facility adjacent to the subject area.	This comments does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA1-6	If MID electric service is desired into the area, the customers should contact the District's Electric Engineering Department to determine the availability of electric service and coordinate service requirements to the proposed project.	The City acknowledges MID's recommendation to potential electrical customers, however this comments does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA1-7	The Modesto Irrigation District reserves its future rights to utilize its property, including its canal and electrical easements and rights-of-way, in a manner it deems necessary for the installation and maintenance of electric, irrigation, agricultural and urban drainage, domestic water and telecommunication facilities. These needs, which have not yet been determined, may consist of poles, crossarms, wires, cables, braces, insulators, transformers, service lines, open channels, pipelines, control structures and any necessary appurtenances, as may, in District's opinion, be necessary or desirable.	The City acknowledges MID's reservation of future rights to utilize property owned by MID, however this comments does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
Oakdale Irrigation District		
RA2-1	The Oakdale Irrigation District (OID) has reviewed the Riverbank Local Redevelopment Authority (RLRA) Riverbank Army Ammunition Plant (RAAP) Environmental Impact Report (EIR) and has the following comments and recommendations regarding the RAAP Specific Plan (project or EIR).	This comment acknowledges that the Oakdale Irrigation District has reviewed the Draft EIR and introduces ensuing comments, but does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
RA2-2	A letter was sent on March 8, 2011 in response to the February 2, 2011 Notice of Preparation of a Draft EIR in which a request was made that the Riverbank Lateral be fenced. Both the Land Use Concept Figure 3-4) and the Roadway Plan (figure 3-5) of the EIR do not provide alternatives for the Riverbank Lateral as show on Figure 3-7, Potential OID Realignment. OID restates the request to fence the Riverbank Lateral.	Page 3-14 of the Draft EIR states that the Specific Plan calls for the City to work with the OID to explore the relocation of the OID canal (Riverbank Lateral) in order to create more viable development parcels on the RAAP site. It is also stated that, while the Specific Plan does not commit the City to implementation of this concept, it does set aside land where the Canal could be relocated in the future. As individual development applications are submitted under the RAAP Specific Plan, the relocation of the OID canal will be discussed, however, the City does not anticipate the installation of fencing adjacent to the Canal location.
RA2-3	The project calls for the City of Riverbank to work with OID to explore relocating the Riverbank Lateral. Relocation is possible per OID Policy although no approval has occurred to date. Pre-consultation with OID is strongly recommended during the planning phase of any specific project.	This comment is correct, and as stated in response to Comment RA2-2, as individual development applications are submitted under the RAAP Specific Plan, the relocation of the OID canal will be discussed. The City acknowledges that pre-construction consultation with the OID is strongly recommended during the planning phases of in individual projects.
RA2-4	The OID Langstroth Drain is located on the southern edge of parcel 062-031-005. The EIR recommends that the western and southern project frontages along Claribel and Claus Road be widened to their ultimate widths with appropriate turn pockets, bicycle facilities and pedestrian amenities. Expansion of Claribel Road may require the facility be piped. If located underneath Claribel Road, it will become the maintenance responsibility of the City of Riverbank or Stanislaus County.	It is acknowledged that potential expansion of Claribel Road may require the OID Langstroth Drain to be piped, and it will become the maintenance responsibility of the City of Riverbank. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA2-5	The EIR also discusses 2 existing outlets from the from the north storm drain reservoir that discharge into the Riverbank Lateral and a smaller pump that conveys storm water from the lift station directly to the OID Riverbank Lateral. You may wish to revise the EIR as these connections were plugged and removed on February 28, 2013 and the capability of RAAP to discharge storm water into the Riverbank Lateral no longer exists.	Text on page 4.17-28 has been amended as follows: In general, under existing conditions, stormwater runoff is collected in numerous inlets located around the site that connect to a main storm drain line. The main storm drain line carries flows towards the north, opposite the surface grade. At Gate 10, flow is directed through a diversion structure. A valve located at the discharge of the diversion structure remains open allowing stormwater runoff to travel through the diversion structure and down a 36-inch pipe towards a lift station, located adjacent to the north stormwater reservoir. Pumps 1 and 2 of the lift station convey flow into the north reservoir. This reservoir is designed as a detention basin that allows for temporary stormwater runoff to facilitate settling of suspended sediment. ~~Two outlets, with approximately one foot of elevation difference, are provided in the reservoir to discharge water into the Oakdale Irrigation District (OID) 30-inch diameter line that runs parallel to the north side of the reservoir.~~ Between rain events, some water remains in the reservoir~~, below the outlets,~~ and either evaporates, infiltrates into the ground, or is used by the vegetation that grows in the basin. ~~The lift station located near the reservoir has a third smaller pump that conveys stormwater from the lift station directly to the OID pipe during periods of excessive rain.~~

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
San Francisco Public Utilities Commission		
RA3-1	The San Francisco Public Utilities Commission offers the following comments on the Riverbank Army Ammunition Deport Draft EIR (SCH #2011022015):	This comment acknowledges that the San Francisco Public Utilities Commission has reviewed the EIR and introduces ensuing comments, but does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-2	1. The City and County of San Francisco (CCSF), San Francisco Public Utilities Commission (SFPUC) owns a 100-foot-wide right of way (ROW) for the Hetch Hetchy Aqueduct and the San Joaquin Transmission Line, which bisects the Specific Plan area. The Draft EIR acknowledges this ROW and the Specific Plan does not propose development in this area. However, Figure 3-8 in the DEIR identifies the SFPUC ROW as "Buffer/ Greenway/ Open Space". Please note that any use or development of the ROW, such as for landscaped open space, a pedestrian or bicycle trail, parking, emergency access routes or road crossings, must be reviewed and approved by the SFPUC. Further, CCSF owns the ROW in fee, and SFPUC charges fair market value for its use. In addition, SFPUC places restrictions on use of the ROW in order to protect utility infrastructure and insure that it is accessible for maintenance. SFPUC ROW use requirements are attached (Attachment 1).	As stated on page 3- 14, the Specific Plan does not propose any changes to the Hetch Hetchy Aqueduct, and new development will be outside of the 100-foot-wide parcel. It is acknowledged that any use or development within the Hetch Hetchy Aqueduct, including landscaped open space, pedestrian or bicycle trails, parking, emergency access routes or road crossings, must be reviewed and approved by the SFPUC.
RA3-3	2. In addition, please note that the land use rights associated with the Army's entry road, which crosses the SFPUC ROW, should be investigated to determine whether this use is covered by an easement. If not, use of this crossing would require review by the SFPUC and, if approved, would be subject to a revocable license from the SFPUC.	It is believed that this comment is referring to the existing rail line that traverses the SFPUC ROW within the RAAP site. The RAAP Specific Plan does not propose construction of any new crossings over the SFPUC property. The existing rail line is within an existing easement, and will remain as a component of the Specific Plan.
RA3-4	3. In 2011 URS, a consultant to SFPUC, reviewed existing environmental documents that addressed the RAAP Superfund site to evaluate any potential impacts to SFPUC's right of way property from activities at the RAAP. As detailed in the attached letter report, "Request for Additional Characterization of the San Francisco Hetch Hetchy Water and Power Division Property Associated with the Riverbank Army Ammunition Plant Superfund Site", which we submit as an element of this comment (Attachment 2), soils in the SFPUC right of way may be contaminated due to the presence of a Transite (asbestos cement) pipe, a past leak in the Transite waste sewer line, leaks in a stormwater line, and overflows from stormwater retention ponds adjacent to the right of way. Additional sampling of soils in the right of way was recommended, and it also was recommended that the Transite pipeline be	This comment provides a summary of the URS report that is attached to the comment letter and responded to in the responses to Comments RA3-12 through RA3-23. Please see the response to RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	removed rather than abandoned in place. SFPUC is not aware if these actions were ever carried out. If contaminated soils or other hazardous materials are present, this could pose risks to utility workers in the right of way.	
RA3-5	**San Francisco Public Utilities Commission Pipeline Right of Way Requirements**	This comment is the title for the list of requirements that follows.
RA3-6	*Utilities* o No utility may be installed along, rather than across, the Right of Way. Only perpendicular crossings are permitted. o No aerial utility crossing over the Right of Way is permitted except in city streets.	This comment provides the requirements for the installation of utilities in SFPUC pipeline rights of way. The RAAP Specific Plan does not propose the installation of utilities in the SFPUC right of way, and this comment does not question the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-7	*Land Use, Structures, and Accessibility* o Structures on the Right of Way are strictly prohibited. No one shall construct or place any temporary or permanent structure or improvement in, on, under or about the Right of Way. For the SFPUC's purposes, asphalt, concrete and cementitious concrete driveways, sidewalks and parking areas, and fences are deemed "improvements," and are subject to SFPUC review and approval. o No use is permitted that would restrict access to Right of Way at any time by SFPUC staff, construction equipment or vehicles. This means that structures on adjacent property must be setback at least 10 feet from the Right of Way. o An adjacent property owner or tenant may not use the Right of Way fulfill its open space, setback, emergency access or other development requirements. o No use that would cause ponding on the Right of Way is permitted. o Any use that cannot effectively be displaced in a timely manner upon the SFPUC's request is disfavored. o Any use that may contaminate with hazardous materials the soils, water or natural habitat of SFPUC property is prohibited. o Any use where the Right of Way would provide an adjacent owner, tenant or licensee with its sole emergency access to the tenant or licensee's property is prohibited. o Any use that would increase the SFPUC's potential liability or diminish its security is disfavored. o Any use inconsistent with any existing or future policies adopted by the SFPUC, as they may be amended or modified from time to time, is disfavored.	This comment provides the requirements for land use, structures, and accessibility in SFPUC pipeline rights of way. This comments does not question the sufficiency of the analysis or mitigation measures contained in the EIR.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
RA3-8	*Restoration* The SFPUC is not responsible for restoring or replacing any vegetation or improvement on the Right of Way damaged or demolished so that the SFPUC may access, maintain or repair its pipelines. The SFPUC will restore the ground with soil compacted to SFPUC standards. The vegetation or improvement owner is responsible any additional work or the restoration.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-9	*Vegetation* No trees or large shrubs may be planted within the Right of Way. Other vegetation may only be installed with the SFPUC's prior written consent. For a list of plants that may be permitted in the Right of Way, please refer to SFPUC Integrated Vegetation Management Policy Section 13.005 at http://www.sfwater.org/index.aspx?page=431. The tenant or licensee is responsible for vegetation maintenance and removal.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-10	*Right of Way Loading Restrictions* The maximum loading on the Right of Way should not exceed traffic loading HS-20 on the paved surfaces when the pipeline has a minimum four-foot cover. Overburdened or additional live or dead loads such as load-bearing footings, pole foundations, or large boulders within the influence line of the pipe trench is prohibited.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-11	*Right of Way Cover Requirements* To prevent damage to the PUC's underground pipelines, an adjacent owner or tenant's use of vehicles and equipment within twenty feet (20') of each side of the centerline of the PUC's pipelines (measured on the surface) are subject to the restrictions stated in Exhibit B.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-12	URS was tasked with reviewing existing environmental documents to assess potential impacts to the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water and Power Division (HHWP) property, located on the Riverbank Army Ammunition Plant (RBAAP) Superfund Site. The HHWP utility currently bisects the northern portion the RBAAP site. In 1952, the City and County of San Francisco issued a permit to the U.S. Army to occupy and use the HHWP property crossing the RBAAP property.	This comment provides an introduction to a characterization of the SFPUC property located on the RAAP site. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA3-13	To evaluate any potential impacts to the HHWP property from activities at the RBAAP site, URS reviewed the following documents provided by the SFPUC: • Site Investigation Report Riverbank Army Ammunition Plant	This comment lists the documents that were reviewed in order to evaluate any potential impacts to the SFPUC-owned property. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	Riverbank, California, March 2008 (CH2MHill, 2008); • Environmental Condition of Property Phase I Report Riverbank Army Ammunition Plant, Riverbank, California, November 17, 2006 (CH2MHILL, 2006); and • Second Five Year Review Report Final Riverbank Army Ammunition Plant, City of Riverbank Stanislaus County California, September 2006 (U.S. Army, 2006). Based on a review of these documents, three areas of concern were identified associated with the HHWP property where it bisects the RBAAP property: 1. Site RBAAP-04/SWMU-12: A process waste sewer line made of Transite (asbestos cement) material crosses the HHWP property. Historically, there was a break in this line that released untreated process wastewater onto the HHWP property. Additionally, the Transite pipe material itself is hazardous if disturbed. 2. Site RBAAP-09/SWMU 20: A stormwater line servicing the RBAAP stormwater system crosses HHWP property to connect to the stormwater retention ponds. Leaks in the stormwater line where it crosses HHWP property may have resulted in contamination of soil on HHWP property. 3. Site RBAAP-09/SWMU 20: The stormwater retention ponds located directly adjacent to the HHWP property have historically overflowed. These overflows may have resulted in contamination of soil on the HHWP property.	
RA3-14	**Site RBAAP-04: Process Waste Sewer Line** In 1972, a break occurred in the effluent sewer line that transported wastewater from the wastewater treatment plant to the facility evaporation percolation ponds, located off site adjacent to the Stanislaus River. The break was at the intersection of the HHWP property. According to available information, this break was not discovered for 7 days, and an estimated 1 million gallons per day of wastewater were being discharged through the pipe at this time. An unknown volume of wastewater was released, sufficient to cause pooling at the ground surface (CH2MHILL 2006). Additionally, SFPUC understands that the sewer line was video surveyed, and that additional breaks in the line were observed as reported in the Nor Cal Pipeline Services Sewer Report, Project Name: Riverbank Army Ammunition Plant October 2009 (Nor Cal, 2009).	This comment suggests the completion of additional studies to evaluate whether or not contaminants of concern associated with the RAAP site are located within SFPUC-owned land. As discussed in Chapter 4.9, Hazards and Hazardous Materials, on page 4.9-14, as future development applications for project within the RAAP site are received, the City will require that any hazardous materials issues be fully disclosed, analyzed, and mitigated to ensure against any risk relative to any nearby planned or existing land uses and their users. The recommended remediation activities identified in this comment and further discussed in Comments RA3-15 through RA3-23 would be addressed on a project-by-project basis, in site-specific hazardous waste analyses, and through remedial action plans, where necessary.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	According to the 2006 Phase I Report, an investigation was completed in the vicinity of the pipe leak during the Confirmatory Phase of the Contamination Survey. This investigation included collection of four soil sample cores in the vicinity of the pipe break, and one background sample. Samples were only analyzed for California Title 22 Metals, and results indicated only chromium, copper, and fluoride were present at concentrations close to or greater than three times background (CH2MHILL 2006). Therefore, the Feasibility Study recommended no further action in this area. Because multiple contaminants of concern (COCs) associated with the RBAAP facility could have been present in the water in the effluent sewer line, it would be appropriate to collect samples for analysis beyond Title 22 Metals. Other contaminants associated with the site include: hexavalent chromium, volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), cyanide, and polychlorinated biphenyls (PCBs). VOCs would be less likely to persist in shallow soils, because the spill occurred in the 1970s. However, PCBs, TPH, hexavalent chromium, and cyanide could have been present in wastewater, and would be reasonably expected to be present in shallow soil in the vicinity of the break. Some of these COCs were sampled during the Remedial Investigation (RI) at other sewer-related sites at the RBAAP, but not at the sewer line break location. URS recommends that additional samples be collected at the location of any breaks in the line, and sampled for these COCs. A review of the line video survey should be conducted to identify any breaks on or near the HHWP property. If new breaks on or adjacent to the HHWP property are observed in the video surveys, then additional sampling should be conducted in these areas as well. Additionally, because the Transite pipe represents a hazard to future water utility workers if left in place, the pipe should be removed when it is no longer in use, rather than abandoned in place.	
RA3-15	**Site RBAAP-09/SWMU 20: Storm Discharge Lines** Although no specific release from a break in the stormwater discharge lines has been documented in the reports reviewed, the discharge line crosses the HHWP to connect to the stormwater retention ponds. Based on the Nor Cal Pipeline Services Sewer Report, SFPUC understands that this line was video surveyed and that breaks may have been	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	observed (Nor Cal, 2009). A review of the line video survey should be conducted to identify any breaks on the HHWP property. If any breaks in this line are present on or adjacent to the HHWP property, soil samples should be collected at and below the depth of the line and analyzed for Title 22 Metals, PCBs, TPH, hexavalent chromium, and cyanide. These contaminants are all COCs at the site, and could be present in any stormwater runoff transferred through this line.	
RA3-16	**Site RBAAP-09/SWMU 20: Stormwater Retention Ponds** The Northwest Storm Reservoir is located adjacent to the Hetch Hetchy aqueduct on the HHWP property. Historically, this reservoir has overflowed in heavy rains. In 1974, the Army Environmental Hygiene Agency reported a sample collected from water in the Storm Reservoir had results showing elevated concentrations of selected heavy metals (CH2MHILL 2006). During Phase I of the RI at the site, two sediment samples were collected from the reservoir and analyzed for total and hexavalent chromium, total and free cyanide, 1 ,1-dichloroethylene, and the organic persistent and bioaccumulative toxic substances ·listed in California Title 22 California Code of Regulations. The analytical results documented total chromium at levels greater than three times background. Although it was determined that the reservoir was not a significant source of groundwater contamination, the potential shallow soil contamination was not considered (CH2MHILL 2006). Because elevated concentrations of heavy metals have been detected in both water and sediment present in the stormwater reservoir, contaminants could potentially have migrated to the HHWP soils during an overflow. Although potential soil contamination from stormwater overflow is not likely to be a source of groundwater contamination, it would result in contaminated soil on the HHWP property. Therefore, samples should be collected on the HHWP property in the vicinity of the stormwater reservoir to confirm that contamination is not present. Sample analysis should include Title 22 Metals, hexavalent chromium, PCBs, and cyanide.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.
RA3-17	**Regulatory and Guidance Information** The RBAAP site investigation was performed under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Public Law (PL) 96-510 as amended by Superfund Amendment and	This comment provides an introduction to Comments RA3-18 through RA3-22. This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	Reauthorization Act (SARA) (PL 99-499) and the Community Environmental Response Facilitation Act (CERFA) PL 102-42. Title 40 environmental regulations and U.S. EPA guidance documents guided the environmental investigation, remedy selection, and Record of Decision (ROD). In addition, the 2006 Phase I ESA was a component of the Environmental Baseline Survey (EBS) performed under Department of Defense policy to support a future Finding of Suitability of Transfer (FOST). It appears that the data gaps identified in this letter are covered by the following regulations and guidance:	
RA3-18	**1) CERCLA Site Investigation:** The site investigation generally followed the 1988 U.S. EPA Remedial Investigation I Feasibility Study (RifFS) Guidance (EPA/540/G-89/004); however, it appears that the selection of COCs for sites RBAAP-04 and RBAAP-09 did not include all the known wastes stored and released in those areas as required in the guidance. The liquid wastes released in these areas should have been investigated for all applicable COCs including hexavalent chromium, VOCs, TPH, cyanide, and PCBs. The incomplete COC selection created a data gap that propagated into the risk assessment and remedy selection stages of the CERCLA process.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.
RA3-19	**2) Remedy Selection:** The remedy selection and ROD for this site generally followed the 1999 U.S. EPA Guide to Preparing Superfund Proposed Plans, Records Of Decision, And Other Remedy Selection Decision Documents Guidance (EPA 540-R-98-031); however, it appears that the data gap from the missing COCs for sites RBAAP-04 and RBAAP-09 carried through from the site investigation phase to the risk assessment and remedy selection phase. The evaluation of the nine criteria could not take into account the potential COCs at sites RBAAP-04 and RBAAP-09 because no information was available regarding the presence of all the potential COCs. Following U.S. EPA guidance any minor changes to the remedy required by new information could be documented in the Administrative Record and/or a future ROD Amendment.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.
RA3-20	**3) Five-Year Review:** The 2006 Second Five Year Review Report Riverbank Army Ammunition Plant prepared by AHTNA generally followed the U.S. EPA 2001 Comprehensive Five-Year Review Guidance (EPA 540-R-01-007); however, the COC data gaps for sites RBAAP-04 and RBAAP-09 were not identified in the review. The U.S. EPA concurred with the U.S. Army that the remedy was protective of human health and the environment; however, the Five-Year Review	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.

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Comment Number	Comment	Response
	discussed future implementation of Institutional Controls at the site and continuing RCRA closure for the Industrial Wastewater Collection System. It appears that the COC data gaps for sites RBAAP-04 and RBAAP-09, and the potential presence of utility worker risk from COCs and from the buried Transite pipe should be addressed in the Institutional Controls and RCRA closure that are currently in progress. If additional data are collected as requested in this letter the results could be appended to the Administrative Record and/or included in a future ROD amendment depending on whether the findings are significant. In addition, the management in place of the buried Transite pipe addressed through Institutional Controls or RCRA closure should be documented in the administrative record and/or in a future ROD amendment, as required.	
RA3-21	**4) Property Transfer:** The potential presence of COCs that were not sampled for at the three locations identified above and the presence of the Transite pipe are covered under CERCLA 120(h) (as amended) which requires that the government certify that "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer."	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.
RA3-22	**5) Environmental Baseline Survey:** The general requirement in CERCLA 120(h) is defined in more detail in DOD policy, in 40 CFR 373, and in ASTM Method D6008-96(2005) "Standard Practice for Conducting Environmental Baseline Surveys." The 2006 Phase I ESA prepared by CH2M Hill generally followed ASTM D6008-96 (2005); however, although this standard explicitly calls for a detailed review of records associated with spills (Section 7.3.1) and contamination from runoff (7.3.19) the COC data gaps for sites RBAAP-04 and RBAAP-09 were not identified. Under the ASTM D6008-96 (2005) standard "if current records are incomplete regarding the nature and extent of contaminant sources, the user or environmental professional will note the strategy for completing relevant records." Since the COC data gaps in RBAAP-04 and RBAAP-09 were not identified or addressed it appears that the 2006 Phase I ESA overlooked the potential COCs in these areas.	This comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.
RA3-23	**Recommendations** In summary, URS recommends that additional sampling be conducted in the three areas of concern described above to determine if soil on the HHWP property has been impacted. Additionally, URS recom-	This comment provides recommendations with respect to remediating the RAAP site. Please refer to the response to Comment RA3-14 with regard to the mitigation of potential impacts related to hazardous materials.

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Comment Number	Comment	Response
	mends that the video survey of the wastewater and stormwater lines be reviewed to target sampling around any breaks on-or in the vicinity of-the HHWP property. Samples should be analyzed for COCs, including Title 22 Metals, hexavalent chromium, PCBs, and cyanide. Lastly, the disposition of the Transite wastewater line after it is no longer in use should be addressed to mitigate risks to future utility workers. The responsibility for addressing the risks from the pipe should be with the U.S. Army, rather than the HHWP.	
Stanislaus Consolidated Fire Protection District		
RA4-1	Stanislaus Consolidated Fire Protection District (SCFPD} has reviewed the "Draft Environmental Impact Report (EIR} Riverbank Local Redevelopment Authority Specific Plan for Riverbank Army Ammunition Plant" and wishes to have the following comments included:	This comment acknowledges that the Stainslaus Consolidated Fire Protection District has reviewed the EIR and introduces ensuing comments, but does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA4-2	1. The formation of Community Services Districts and an improvement to SCFPD Development Fees needed to fund the anticipated staffing and capital assets is referenced in the Draft EIR but should be included as a mitigation measure with identifiable benchmarks.	The EIR includes Mitigation Measure PUB-1 which requires the City to negotiate with Stanislaus Consolidated Fire Protection District to establish a financing structure that requires development fees from future development resulting from implementation of the RAAP Specific Plan to contribute to the construction of new fire protection facilities. The benchmarks requested in this comment will be agreed upon prior to construction of future development under the RAAP Specific Plan.
RA4-3	2. For ALL mitigation measures, benchmarks shall be identified prior to the adoption of the EIR, which will trigger the implementation of said measures.	This comment requests that benchmarks be included in mitigation measures prior to the certification of the EIR. With respect to benchmarks and safety-related mitigation measures, please see response to Comment RA4-2.
Stanislaus County		
RA5-1	The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has determined that it may have a significant effect on the environment. The following comments/conditions are submitted by the Department of Public Works, Senior Land Development Coordinator:	This comment acknowledges that the Stanislaus County Environmental Review Committee has reviewed the EIR and introduces ensuing comments, but this comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR.
RA5-2	• The County's Public Works Transit Division currently operates transit service in the City of Riverbank and plans to implement Dial-A-Ride (DAR) service in the City of Riverbank beginning August 5, 2013. As a result of the service improvements planned for 2013, the service boundary for the DAR service in the City has been extended from Claus Road to Eleanor Avenue and to Montgomery Rd. The Transit	The Specific Plan identifies potential transit stop locations along Claus and Claribel Road. The final location transit stops along the Project frontage will be coordinated with the Transit Division when final design plans are prepared.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	Division is recommending that any future and potential transit stops to be located along both Claus and Claribel Roads should be coordinated with the Transit Division to ensure it may provide input on the location of these amenities.	
RA5-3	• Mitigation measures state that each development shall pay its fair share for both the Claribel at Coffee and Claribel at Roselle intersections for left turn pockets. Developments may require direct mitigation prior to any future widening project, therefore, each development shall be responsible for direct mitigation including, but not limited to, the construction of right turn lanes, additional through lanes, and increased corner radiuses for larger vehicles. These mitigations and fair share contributions should not be limited to the intersections of Claribel at Coffee and Claribel at Roselle intersections.	The intersections of Coffee Road and Roselle Avenue at Claribel Road were identified in the Draft EIR as operating at a deficient level of service in the existing condition, prior to addition of traffic from the Project (LOS F during both peak hours). The addition of traffic from the Project would worsen LOS F conditions at both intersections during the morning and evening peak hours. The recommended mitigation measure is to signalize the Coffee Road and Roselle Avenue at Claribel Road intersections and construct left-turn pocket (Mitigation Measures TRANS-1 and TRANS-2). These improvements are included in the StanCOG RTP in conjunction with other improvements, further described below. Stanislaus County Plans to start construction on the widening on Claribel Road between McHenry Avenue and Oakdale Road to provide two travel lanes in each direction and improvements at the Claribel Road/Coffee Road intersection, including signalization and turn pockets. The planned improvements would result in acceptable operations of the intersection with the addition of Project traffic. Construction is scheduled for 2014. Improvements at the Claribel Road/Roselle Avenue intersection, including signalization, are scheduled for construction in 2015/2016. The Project would be required to pay local and regional fees that would contribute to construction of planned improvements along the corridor.
RA5-4	• The EIR should not consider the North County Corridor in its baseline condition as a route has not yet been adopted. Upon adoption, the Specific Plan should be revised with the updated traffic model.	The North County Corridor (NCC) alignment considered in the Draft EIR is consistent with the alignment identified in the State Route 108 East Route Adoption project as of the time this analysis was conducted. The Draft EIR does recognize that the ultimate alignment of the NCC is still under evaluation and a preferred route has not yet been adopted. One alignment currently under consideration would construct the NCC along Claribel Avenue, which could have Project site access and circulation implications from Claus and Claribel Roads, as it would eliminate the potential for access to be provided from Claribel Road and would restrict the numnber and location of access points from Claus Road. Once the preferred alignment is selected, the Specific Plan and associated technical documents may need to be modified to reflect site access and circulation changes necessary to accommodate the roadway construction.
RA5-5	• Road widening of Claribel Road and Claus Road are mentioned in the summary but not considered in the mitigation measures. Please include this as part of the mitigation measures.	As described in Section 4.16 of the Draft EIR, the Project contributes traffic to the Claribel Road corridor. Two intersection impacts were identified in the Existing Plus Project condition as Project traffic would worsen already deficient conditions at two intersections. Mitigation measures were identified (see response to RA5-3). The Project would also add traffic to the Claus Road corridor. No Project impacts were identified in the Existing Plus Project Scenario. The StanCOG RTP identifies widening of Claribel and Claus Road as Tier I improvements that are expected to be in place by 2025 and there are no Project specific mitigation measures other than to pay applicable fees.

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Comment Number	Comment	Response
RA5-6	• Measure Trans-3 states "Future developers within the RAAP area shall contribute their fair share towards improvements at the intersections identified above." Table 4.16-9 shows Claribel at Coffee and Claribel at Roselle intersections while the intent of Trans-3 is for the intersections of Atchison Street (State Route 108) at 1st Street, State Route 108 at Claus Road and State Route 1 08 at Patterson Road. This should be clearly identified in the mitigation measures.	Mitigation Measure TRANS-3 has been amended as follows: Mitigation Measure TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements ~~at the intersections identified above, though the payment of local and regional traffic fees, that improve turning radii for large trucks~~to provide adequate turning radii in conformance with STAA requirements at intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road, though the payment of local and regional traffic fees. No other improvements ~~have been identified for~~ are needed to mitigate project impacts at these intersections.
RA5-7	• In addition, Measure TRANS-5 and Measure TRANS-1 are conflicting measures for the intersection at Claribel and Coffee. Please provide clarifying information to Angie Halverson, Senior Land Development Coordinator with the Department of Public Works.	TRANS-1 identifies improvements that would need to be constructed in the near-term at the Claribel Road/Coffee Road intersection to provide acceptable operations, including signalization and provision of left-turn pockets on all approaches. TRANS-5 identifies long-term improvements, beyond those already planned for, that would need to be constructed at this intersection to accommodate planned development in the area over the next 20 to 30 years. The cumulative impact at this intersection was identified as significant and unavoidable due to the uncertainty in the timing of constructing the long-term improvements.
San Joaquin Valley Air Pollution Control District		
RA6-1	The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Specific Plan and Draft Environmental Impact Report (EIR) for the Riverbank Army Ammunition Plant (RAAP) project. The project includes the development of a 146-acre project site with up to 119,058 sf new commercial/retail space, 1,411,542 sf of industrial space (673,625 sf existing, 737,917 sf new), and 116,637 sf of new office/research and development space. As discussed in the EIR, the Specific Plan is a program level project and should include a discussion of policies, which when implemented, will reduce or mitigate impacts on air quality at the individual project level. To aid the City of Riverbank in addressing project specific issues at the program level and review the feasibility of all potential mitigation measures, the District offers the following comments and recommendations.	This comment acknowledges that the San Joaquin Valley Air Pollution Control District has reviewed the EIR and introduces ensuing comments, but this comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. No response is required.
RA6-2	**Criteria Pollutant Emissions** 1. Mitigation Measures AQ-1a and AQ-2 have been incorporated into the project to reduce potential impacts from construction and operational activities associated with the buildout of the Specific Plan. The discussions in the EIR and the mitigation measures indicate that all	Mitigation Measure AQ-1a has been amended as follows: Mitigation Measure AQ-1a: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared

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Comment Number	Comment	Response
	future projects within the RAAP will require additional emissions analysis and will be mitigated in accordance with District Rule 9510 (Indirect Source Review). However, the mitigation measures as written are unclear as to whether they are meant to: (1) ensure that future development project will be compliant with CEQA requirements, (2) ensure that all future development projects would comply with District Rule 9510 (Indirect Source Review) requirements, or (3) ensure compliance with both CEQA and District Rule 9510. The District recommends that discussions in the EIR and Mitigation Measure AQ-1a and AQ-2 be amended, or new measures added, to clarify the intent of each measure and to identify how the measures will be made enforceable by the City of Riverbank. The District offers the following recommendations:	to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1a through AQ-1d. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with construction period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Mitigation Measure AQ-2 has been amended as follows: Mitigation Measure AQ-2: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g., improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with operational period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Each individual project, including those projects allowed by right, that introduce significant sources of air pollutant emissions or stationary sources of TACs shall complete separate ambient air quality analysis and health risks assessments to ensure that violations of ambient air quality standards do not occur, including an analysis of cumulative emissions from the RAAP Specific Plan. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
RA6-3	1 a) If the intent of the mitigation measure is to ensure compliance with CEQA requirements: Table 5-1 of the Specific Plan identifies allowed uses within the various development districts within the RAAP plan area. Some of these uses appear to be allowed by right (ministerial approvals only), while others would require additional conditions or the issuance of a use permit (discretionary approvals). As CCR§ 15268 exempts ministerial projects from CEQA requirements, it is unclear whether the City will require additional analysis of construction and operational emissions for all projects within the RAAP plan area, or whether these requirement will be only for projects requiring additional conditions or use permits. It is also unclear whether the City will require project-level developments to mitigate impacts on air quality to less than significant. The District recommends that the discussions on construction and operational related impacts and Mitigation Measure AQ-1 a and AQ-2 be amended to clarify: which projects, if any, would be considered ministerial approvals and which would require additional review; whether projects must mitigate to less-than-significant; and the actions the City will take to enforce the required mitigation.	Please refer to response RA6-2 above.
RA6-4	1 b) If the intent of the mitigation measure is to ensure compliance with District Rule 9510: As previously discussed, Table 5-1 identifies allowed uses within the various development districts within the RAAP plan area, some of which appear to be allowed uses by right with no further CEQA analysis required. As such, approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank for some uses identified in Table 5-1. The District recommends that the mitigation measures be amended to include a requirement for all applicants within the RAAP plan area, including those projects allowed by right, to demonstrate to the City compliance with Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval.	Please refer to response RA6-2 above.
RA6-5	1 c) If the intent of the mitigation measures are to ensure compliance with both CEQA and District Rule 9510 requirements: The District recommends that the measures be amended to include all District recommendations discussed above.	Please refer to response RA6-2 above.
RA6-6	For project emissions that would be significant and unavoidable, the District recommends the environmental document be revised to in-	The emissions from the RAAP Specific Plan are considered significant, because they are compared to the District's recommended significance thresholds that apply to projects. As a re-

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

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	clude a discussion of the feasibility of implementing a voluntary emission reduction agreement (VERA) to mitigate project specific impacts to less than significant levels. A VERA is a mitigation measure by which the project propoent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the em1ss1ons reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's Emission Reduction Incentive Program (ERIP). The funds are disbursed by ERIP in the form of grants for projects that achieve emission reductions. Thus, project specific impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. The District has been developing and implementing VERA contracts with project developers to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, and effectively achieves the emission reductions required by a lead agency, by mitigating project related impacts on air quality to a net zero level by supplying real and contemporaneous emissions reductions. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document be amended to include an assessment of the feasibility of implementing a VERA. Additional information on implementing a VERA can be obtained by contacting District CEQA staff at (559) 230-6000.	sult, emissions from the plan are higher than those that would occur from any one project. Land use developments constructed as part of this project would be subject to the requirements of the District's Indirect Source Review Rule (ISR), SJVAPCD Rule 9510. As discussed on pages 4.3-11 of the Draft EIR, ISR would require substantial reductions of construction and operational period emissions from the land use activities. This is in addition to SJVAPCD requirements to control emissions from construction activities (Rule 8021 which enforces Regulation VIII described on page 4.3-12 of the Draft EIR), requirements to reduce worker commute emissions (Rule 9410, described on page 4.3-12 of the Draft EIR), SJVAPCD rules and regulations regarding new sources of air pollutants emissions (i.e., those that apply to SJVAPCD regulated sources), and CARB requirements that apply to construction equipment fleets, truck fleets and portable equipment. As a result, projects developed under the RAAP would be required to reduce emissions at a level probably greater than other similar projects in the State or perhaps the country. The large quantity of the emissions predicted in the Draft EIR is related to the type and size of the plan that would consist of numerous projects. The RAAP is actually an accumulation of projects that have been envisioned in the planning process conducted by the City (i.e., beginning with the General Plan Update). Smaller land use projects that, together, make up the entire project could be proposed. This would certainly result in much lower, and perhaps, insignificant emissions at a project-level analysis. However, the Draft EIR provided emissions estimates for the entire RAAP so that mitigation measures to reduce all environmental impacts can be consistently applied to fairly and effectively reduce significant impacts. The City would anticipate that SJVAPCD and CARB requirements would effectively reduce project air pollutant emissions to the extent feasible.
RA6-7	**Health Risks** 3. The DEIR includes a health risk assessment (HRA); however, it does not include an ambient air quality analysis (AAQA). The District offers the following comments and recommendations regarding the health risk discussion and analysis presented in the EIR:	Violations of ambient air quality standards were assessed by modeling the emissions from anticipated land uses constructed as part of the entire RAAP Specific Plan and comparing those to District emission thresholds. Emissions exceeding the thresholds were assumed to cause or contribute to violations of ambient air quality standards and were identified as significant. Because this is a Specific Plan, there is not enough detail to model on-site emissions from individual land uses that could be built out as part of the RAAP Specific Plan. Individu-

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

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		al projects and their emissions are required to be analyzed and compared to appropriate threshold per SJVAPCD significance thresholds.
RA6-8	3a) The discussion on exposure of sensitive receptors to substantial pollutant concentrations did not provide adequate information regarding the details of the HRA, nor were the details provided in the appendices to the EIR. Furthermore, the actual modeling files were not submitted to the District for review. As such, the District cannot make a determination as to the level of compliance with District policies and methodologies for performing HRA analyses.	The HRA was updated to include the health risks associated with onsite activity associated with the RAAP Specific Plan build-out in accordance with District modeling guidance. The Draft EIR now addresses health risks from both on-site and off-site sources. On-site sources would be diesel particulate matter emitted by truck travel at slow speeds within the Specific Plan. Stationary sources of contaminant emissions (e.g., diesel generators, fueling stations or dry cleaners) have not been identified. These types of sources could be included as part of projects proposed under the RAAP Specific Plan. These types of sources would be subject to State and District rules and regulations to minimize the emissions and associated health risks. Maximum excess lifetime cancer risk from on-site sources would be 4.3 per million. An analysis of off-site sources, although not recommended by the District, is included in the analysis. Section 4.3, Air Quality, of the Draft EIR has been revised to include both Clause Road traffic and emissions from the Specific Plan area, where the cumulative excess lifetime cancer risk would be 9.0 per million. Appendix B of the Draft EIR has been updated to include the additional modeling information. AERMOD modeling input and output files are available from the City.
RA6-9	3b) The only emissions modeled in the HRA were diesel particulate emission (DPM) increases on Claus Road. The District's methodology for completing an HRA for development projects is to predict risk only for emissions of toxics within the boundaries of the project site excluding emissions from public highways. Because Claus Road is a public highway outside of the project area boundaries, any increase in DPM from traffic generated by the Specific Plan would not be considered as producing a risk associated with the project.	Please refer to response RA6-8 above.
RA6-10	3c) Buildout of the Specific Plan will result in emissions generated by diesel truck traffic from retail and industrial land uses, stationary sources used in manufacturing, and from commercial uses such as restaurants, fuel dispensing operations, and dry cleaning. (It should be noted that most future dry cleaning operations will not emit perchloroethylene; however, some perchloroethylene replacements may be or may contain toxic air contaminants.) Stationary source emissions from individual developments within the Northern and Southern Caps may be subject to District permitting regulations, in which case the District would perform a Risk Management Review (RMR) and AAQA as appropriate. However, please note that the District's analyses include only those emissions that the District has statutory authority and will not include emissions generated by mobile sources. As such, more	Please refer to response RA6-8 above.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

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	detailed analyses is needed to comply with CEQA requirements.	
RA6-11	3d) An AAQA should be performed to ensure that Federal and State ambient air quality standards for all criteria pollutants, including nitrogen dioxide, will not be violated. Concentration predictions need to be made for receptors surrounding the project that are in ambient air and not just residential or worker sites.	At the plan stage, there is not enough detail to model individual air pollutant sources. Emissions from the plan build-out, which could occur over many years was modeled and those levels were compared to emission thresholds contained in the District's Guide for Assessing and Mitigating Air Quality Impacts, adopted 1998 and revised in 2002 and 2004. Project details necessary to model ambient air quality concentrat5ions from the project site are not available. Appropriate analysis of ambient air quality standards would require sufficient detail of anticipated on-site activities that cause emissions and the corresponding project-specific traffic activity and type. That project information is not available at this time. The outcome of such a study may find that project contributions to localized concentrations of ozone and particulate matter (i.e., PM10 and PM2.5), like carbon monoxide, would be less than significant. Given the lack of specific project information, the Draft EIR is not able to provide a reasonable prediction of localized nitrogen dioxide, PM10 and PM2.5 concentrations. Unlike the health risk assessment that addresses impacts at existing or locations of future sensitive receptors, these predictions are made at locations where any member of the public may be exposed. Therefore, these types of analysis require inputs that reasonably reflect on-site and off-site activities with respect to potential receptors so that relatively accurate predictions of air pollutant levels can be made. Because traffic is the primary source of project carbon monoxide concentrations and the Draft EIR provides a reasonable worst-case forecast of traffic, carbon monoxide concentrations were predicted at receptors along roadways. This cannot be conducted for receptors on site and adjacent to different land uses within the project site or adjacent to the project boundaries.
RA6-12	3e) The HRA presented in the EIR is not adequate to make a determination of the significance of potential health impacts resulting from implementation of the Specific Plan and should not be considered to be a programmatic HRA. The District recommends that a program level HRA and AAQA be prepared. The District strongly recommends that the City or its consultants contact the District for more information regarding the appropriate modeling approach. More information on HRAs can be obtained by: • Contacting District Technical Services staff by phone at 9559) 230-6000; • E-mailing inquiries to: hramodeler@valleyair.org; or • Visiting the District's website at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.	The Draft EIR HRA analyzes the primary source of contaminant emissions that would be emitted from the RAAP Specific Plan, which is traffic. The HRA was modified to include estimates of on-site traffic activity, including the use of plan-specific truck traffic forecasts. Because this analysis is conducted at the plan level, it does not include stationary sources of emissions that are not currently envisioned. As indicated under Response to Comment RA6-3 through RA6-5, project-level air quality analysis would be required as part of Mitigation Measure AQ-2.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
RA6-13	3f) Accurate quantification of health risks and operational em1ss1ons requires detailed site specific information, e.g. type of emission source, proximity of the source to sensitive receptors, and trip generation information. The required level of detail is typically not available until project specific approvals are being granted. As discussed above, it appears that allowed uses that do not require additional conditions or use permits may be exempt from additional CEQA analysis. However, some of these allowed uses may lead to increased health risks resulting from increases in diesel particulate matter and other emissions from mobile and stationary sources. Therefore, the District recommends the inclusion of a mitigation measure requiring a separate HRA and AAQA be completed for each new development project within the RAAP area, including those that would otherwise appear to be exempt from CEQA (such as those uses allowed by right as). These future analyses should include all mobile and stationary source emissions from each development. As new projects are constructed, the District recommends a cumulative analysis should be prepared to determine the total risk from the sources within the Specific Plan.	See Response to Comment RA6-3 through RA6-5, project-level air quality analysis would be required as part of Mitigation Measure AQ-2.
RA6-14	**District Rules and Regulations** 4. As discussed in the EIR, individual development projects within the scope of the RAAP Specific Plan would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out of new developments, or the expansion of any existing building, the project would include or exceed any one of the following: • 50 dwelling units • 2,000 square feet of commercial space; • 25,000 square feet of light industrial space; • 1 00,000 square feet of heavy industrial space; • 20,000 square feet of medical office space; • 39,000 square feet of general office space; or • 9,000 square feet of educational space; or • 10,000 square feet of government space; or • 20,000 square feet of recreational space; or • 9,000 square feet of space not identified above; or It is important to note that all projects within the scope of the EIR exceeding the thresholds identified above will be subject to Rule 9510. As previously discussed, the adoption of the Specific Plan may constitute the final discretionary approval by the City for those allowed uses identified in Table 5-1. As such, the District strongly recommends the	SJVAPCD requests that demonstration of compliance with SJVAPCD Rule 9510, Indirect Source Review, be made a condition of Project approval. Mitigation Measure AQ-2 requires applicants for individual, site-specific developments under the Specific Plan to comply with SJVAPCD's Rule. Furthermore, mitigation measures identified in this EIR are included in the Mitigation Monitoring and Reporting Plan and are identified as Conditions of Approval.

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	City contact the District's ISR staff to discuss the application process and how to adequately complete an Air Impact Assessment (AIA) Application. District ISR staff is available to meet with the City and/or its consultants to further discuss the requirements of Rule 9510. More information on District Rule 9510 can be obtained by: • Calling the District's ISR staff at (559) 230-6000; • E-mailing inquiries to: ISR@valleyair.org; or • Visiting the District's website at: http ://www.valleyair.org/ISRIISRHome.htm.	
RA6-15	5. Individual development projects within the scope of the RAAP Specific Plan may also be subject to the following District rules and regulations: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 4002 (National Emission Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to individual projects or to obtain information about District permit requirements, project proponents are strongly encouraged to contact the District's Small Business Assistance Office at (209) 557-6446 prior to the start of construction activities. A complete list of current District rules can be found on the District's website at: www.valleyair.org/rules/1ruleslist.htm.	This comment has been noted. Future developments may be subject to SJVAPCD rules and regulations.
RA6-16	**General Comments** 6. The District recommends the discussions regarding the State and Federal Ambient Air Quality Standards (AAQS) and the District's current attainment plans be updated to reflect the most current information as follows:	This comment provides an introduction to Comments RA6-17 and RA6-18.
RA6-17	6a) The 2013 Federal Ambient Air Quality Standard for fine particulate matter (PM2.5) has been reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$. The District recommends that Table 4.3-2 on page 4.3-15 in the EIR be amended to reflect the current PM2.5 AAQS. Current attainment status and AAQS can be found on the District's website at: http://www.valleyair.org/aqinfo/attainment.htm.	This comment has been noted. As shown in Chapter 3 of this Final EIR, Table 4.3-2 of the Draft EIR has been amended to reflect this new standard.
RA6-18	6b) The District recommends that Table 4.3-2 on page 4.3-15 in the EIR be amended to reflect the current PM2.5 AAQS. Current attainment status and AAQS can be found on the District's website at:	This comment has been noted. As shown in Chapter 3 of this Final EIR, page 4.3-21 of the Draft EIR has been amended to reflect this new standard.

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TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
	http://www.valleyair.org/aqinfo/attainment.htm. The District approved the 2012 PM2.5 Plan on December 20, 2012. The plan was then approved by the California Air Resources Board (ARB) on January 24, 2013. This plan assures the San Joaquin Valley Air Basin will comply with the Environmental Protection Agency (EPA) 2006 PM2.5 standard by the 2019 deadline. The District recommends that the discussion on page 4.3-21 in the EIR be amended to reflect the current status of the District's PM2.5 attainment plan. A copy of the District's 2012 PM2.5 Plan can be found on the District's website at: http://www.valleyair.org/Air_Quality_Plans/PM25Plans2012.htm.	
RA6-19	7. Referral documents for future development projects with the scope of the RAAP Specific Plan should include a project summary detailing, at a minimum, the land use designation, project size, and proximity to sensitive receptors and existing emission sources, and should identify the project as being with the scope of the RAAP Specific Plan.	Future development applications under the RAAP Specific Plan would be required to adhere to the Mitigation Measures within the RAAP Specific Plan EIR. Subsequent environmental review would be required for future discretionary approvals. As part of the future environmental review, subsequent projects would be required to evaluate air quality and GHG emissions impacts and be required to consider proximity to sensitive receptors
City of Modesto		
LA1-1	Thank you for providing the City of Modesto the opportunity to review the Army Ammunition Plant Specific Plan and Draft EIR. The City of Modesto offers the following comments:	This comment acknowledges that the City of Modesto has reviewed the EIR and introduces ensuing comments, but this comment does not state a specific concern or question regarding the sufficiency of the analysis or mitigation measures contained in the EIR. No response is required.
LA1-2	1. The intersections of Claus / Sylvan and Claus / Plainview should be added to the set of traffic study intersections. Significant project-related traffic volumes can be expected to occur south of the project, along Claus Road; and,	The intersection of Claus Road and Plainview Road was not selected for inclusion in the study due to the local nature of Plainview Road. Plainview Road is approximately 1-mile in length, connecting Roselle Avenue in the west to Claus Road in the east, providing access to active agricultural uses. The project is not expected to increase traffic volumes on Plainview Road, although it would add through trips to the intersection. Based on changes in traffic volumes along the Claus Road corridor between Terminal Avenue and Claribel Road, very few vehicles turn to/from Plainview Road and the addition of Project traffic through the corridor is not expected to appreciably increase delay for vehicles turning from Plainview Road to Claus Road. The intersection of Claus Road and Sylvan Avenue was recently signalized and additional capacity provided with the construction of turn-pockets. Recent studies indicate that this intersection operates at acceptable service levels with the improvements and the addition of Project traffic is not expected to degrade intersection operations in the near-term, including studies for Village One and Marketplace. The StanCOG RTP identifies widening of Claus Road from Briggsmore Avenue to Claribel Road from two lanes to six lanes, including intersection improvements at the Sylvan Avenue/Claus Road intersection. The improvement is identified as a Tier I Project fully funded project that is planned to be constructed by 2025. Widening of Sylvan Avenue from two lanes to four lanes from Claus Road to Roselle Avenue

TABLE 5-1 **COMMENTS AND RESPONSES MATRIX**

Comment Number	Comment	Response
		is also identified as a Tier I RTP project. With these planned improvements in place, project traffic is expected to represent less than 2 percent of the overall intersection capacity and would not appreciably change the overall planned intersection design. Therefore, the intersections of Claus Road at Plainview and Sylvan Roads were not added to the analysis.
LA1-3	2. The trip distribution of 13% of AM trips from the east on Claribel seems high, relative to the 19% of AM trips from the south on Claus. This data should be confirmed.	Project trip distribution percentages were developed based on a review if existing travel patterns in the area, the location of existing and planned land uses within the region, and a select zone analysis using the Stanislaus Council of Governments (StanCOG) travel demand model. Project trip distribution percentages as presented in the Draft EIR were reviewed and no changes were made to the analysis.

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APPENDIX B

AIR QUALITY

RAAP Specific Plan - 2030 Buildout

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Office Park	116	1000sqft
Industrial Park	1412	1000sqft
Strip Mall	119	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	3		2.2		
		Precipitation Freq (Days)			
			46		

1.3 User Entered Comments

Project Characteristics - CO2 Intensity updated based on California Public Utilities Commission GHG Calculator, version 3c.

Land Use - *

Trips and VMT -

Demolition -

Vehicle Trips - Trip rates based on traffic report (Fehr & Peers, 2011).

Energy Use - *

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Land Use Change -

Sequestration -

Energy Mitigation -

Area Coating - *

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.92	12.70	11.32	0.02	1.33	0.63	1.96	0.32	0.63	0.95	0.00	1,671.04	1,671.04	0.15	0.00	1,674.14
2012	2.27	11.88	16.20	0.03	1.76	0.57	2.33	0.09	0.57	0.66	0.00	2,466.49	2,466.49	0.17	0.00	2,469.96
2013	2.07	10.89	14.89	0.03	1.76	0.51	2.28	0.09	0.51	0.60	0.00	2,438.78	2,438.78	0.15	0.00	2,441.94
2014	12.45	5.30	6.93	0.01	0.84	0.28	1.12	0.04	0.28	0.33	0.00	1,176.15	1,176.15	0.08	0.00	1,177.73
Total	**18.71**	**40.77**	**49.34**	**0.09**	**5.69**	**1.99**	**7.69**	**0.54**	**1.99**	**2.54**	**0.00**	**7,752.46**	**7,752.46**	**0.55**	**0.00**	**7,763.77**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.92	12.70	11.32	0.02	0.63	0.63	1.26	0.32	0.63	0.95	0.00	1,671.04	1,671.04	0.15	0.00	1,674.14
2012	2.27	11.88	16.20	0.03	0.09	0.57	0.66	0.09	0.57	0.66	0.00	2,466.49	2,466.49	0.17	0.00	2,469.96

2013	2.07	10.89	14.89	0.03	0.09	0.51	0.60	0.09	0.51	0.60	0.00	2,438.78	2,438.78	0.15	0.00	2,441.94
2014	12.45	5.30	6.93	0.01	0.04	0.28	0.33	0.04	0.28	0.33	0.00	1,176.15	1,176.15	0.08	0.00	1,177.73
Total	**18.71**	**40.77**	**49.34**	**0.09**	**0.85**	**1.99**	**2.85**	**0.54**	**1.99**	**2.54**	**0.00**	**7,752.46**	**7,752.46**	**0.55**	**0.00**	**7,763.77**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.34	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.13	1.15	0.97	0.01		0.00	0.09		0.00	0.09	0.00	3,446.88	3,446.88	0.25	0.11	3,485.27
Mobile	5.84	20.04	42.31	0.15	13.63	0.67	14.30	0.24	0.61	0.85	0.00	12,183.35	12,183.35	0.32	0.00	12,190.16
Waste						0.00	0.00		0.00	0.00	3,574.93	0.00	3,574.93	211.27	0.00	8,011.65
Water						0.00	0.00		0.00	0.00	0.00	4,990.81	4,990.81	213.32	5.47	11,165.10
Total	**14.31**	**21.19**	**43.28**	**0.16**	**13.63**	**0.67**	**14.39**	**0.24**	**0.61**	**0.94**	**3,574.93**	**20,621.04**	**24,195.97**	**425.16**	**5.58**	**34,852.18**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.34	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.13	1.15	0.97	0.01		0.00	0.09		0.00	0.09	0.00	3,446.88	3,446.88	0.25	0.11	3,485.27
Mobile	5.84	20.04	42.31	0.15	13.63	0.67	14.30	0.24	0.61	0.85	0.00	12,183.35	12,183.35	0.32	0.00	12,190.16

Waste						0.00	0.00		0.00	0.00	3,574.93	0.00	3,574.93	211.27	0.00	8,011.65
Water						0.00	0.00		0.00	0.00	0.00	4,990.81	4,990.81	213.32	5.47	11,165.10
Total	**14.31**	**21.19**	**43.28**	**0.16**	**13.63**	**0.67**	**14.39**	**0.24**	**0.61**	**0.94**	**3,574.93**	**20,621.04**	**24,195.97**	**425.16**	**5.58**	**34,852.18**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.25	2.00	1.15	0.00		0.10	0.10		0.10	0.10	0.00	170.30	170.30	0.02	0.00	170.72

Total	**0.25**	**2.00**	**1.15**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**170.30**	**170.30**	**0.02**	**0.00**	**170.72**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.19	5.19	0.00	0.00	5.20
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.19**	**5.19**	**0.00**	**0.00**	**5.20**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.25	2.00	1.15	0.00		0.10	0.10		0.10	0.10	0.00	170.30	170.30	0.02	0.00	170.72
Total	**0.25**	**2.00**	**1.15**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**170.30**	**170.30**	**0.02**	**0.00**	**170.72**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19	5.19	0.00	0.00	5.20
Total	**0.00**	**0.00**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.19**	**5.19**	**0.00**	**0.00**	**5.20**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.27	0.00	0.27	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.35	0.76	0.00		0.07	0.07		0.07	0.07	0.00	108.80	108.80	0.01	0.00	109.08
Total	**0.16**	**1.35**	**0.76**	**0.00**	**0.27**	**0.07**	**0.34**	**0.15**	**0.07**	**0.22**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.08**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74	3.74	0.00	0.00	3.74
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.74**	**3.74**	**0.00**	**0.00**	**3.74**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.27	0.00	0.27	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.35	0.76	0.00		0.07	0.07		0.07	0.07	0.00	108.80	108.80	0.01	0.00	109.08
Total	**0.16**	**1.35**	**0.76**	**0.00**	**0.27**	**0.07**	**0.34**	**0.15**	**0.07**	**0.22**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.08**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74	3.74	0.00	0.00	3.74
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.74**	**3.74**	**0.00**	**0.00**	**3.74**

3.4 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.33	0.00	0.33	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	4.15	2.16	0.00		0.20	0.20		0.20	0.20	0.00	369.24	369.24	0.04	0.00	370.08
Total	**0.49**	**4.15**	**2.16**	**0.00**	**0.33**	**0.20**	**0.53**	**0.13**	**0.20**	**0.33**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.08**

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Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.38	10.38	0.00	0.00	10.40
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**10.38**	**10.38**	**0.00**	**0.00**	**10.40**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.33	0.00	0.33	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.49	4.15	2.16	0.00		0.20	0.20		0.20	0.20	0.00	369.24	369.24	0.04	0.00	370.08
Total	**0.49**	**4.15**	**2.16**	**0.00**	**0.33**	**0.20**	**0.53**	**0.13**	**0.20**	**0.33**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.08**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6523

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.38	10.38	0.00	0.00	10.40
Total	**0.01**	**0.01**	**0.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10.38**	**10.38**	**0.00**	**0.00**	**10.40**

3.5 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	2.11	1.26	0.00		0.15	0.15		0.15	0.15	0.00	192.39	192.39	0.03	0.00	192.94
Total	**0.32**	**2.11**	**1.26**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**192.39**	**192.39**	**0.03**	**0.00**	**192.94**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.24	2.65	1.49	0.00	0.10	0.08	0.18	0.01	0.08	0.09	0.00	325.47	325.47	0.01	0.00	325.68
Worker	0.44	0.43	4.32	0.01	0.61	0.02	0.63	0.03	0.02	0.05	0.00	485.53	485.53	0.04	0.00	486.30
Total	**0.68**	**3.08**	**5.81**	**0.01**	**0.71**	**0.10**	**0.81**	**0.04**	**0.10**	**0.14**	**0.00**	**811.00**	**811.00**	**0.05**	**0.00**	**811.98**

Mitigated Construction On-Site

6284

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	2.11	1.26	0.00		0.15	0.15		0.15	0.15	0.00	192.39	192.39	0.03	0.00	192.94
Total	**0.32**	**2.11**	**1.26**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**192.39**	**192.39**	**0.03**	**0.00**	**192.94**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.24	2.65	1.49	0.00	0.01	0.08	0.09	0.01	0.08	0.09	0.00	325.47	325.47	0.01	0.00	325.68
Worker	0.44	0.43	4.32	0.01	0.03	0.02	0.05	0.03	0.02	0.05	0.00	485.53	485.53	0.04	0.00	486.30
Total	**0.68**	**3.08**	**5.81**	**0.01**	**0.04**	**0.10**	**0.14**	**0.04**	**0.10**	**0.14**	**0.00**	**811.00**	**811.00**	**0.05**	**0.00**	**811.98**

3.5 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.73	4.87	3.10	0.01		0.33	0.33		0.33	0.33	0.00	478.23	478.23	0.06	0.00	479.48
Total	**0.73**	**4.87**	**3.10**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.54	6.05	3.39	0.01	0.25	0.18	0.44	0.02	0.18	0.21	0.00	808.87	808.87	0.02	0.00	809.35
Worker	0.99	0.96	9.72	0.01	1.51	0.05	1.56	0.07	0.05	0.12	0.00	1,179.39	1,179.39	0.08	0.00	1,181.12
Total	**1.53**	**7.01**	**13.11**	**0.02**	**1.76**	**0.23**	**2.00**	**0.09**	**0.23**	**0.33**	**0.00**	**1,988.26**	**1,988.26**	**0.10**	**0.00**	**1,990.47**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.73	4.87	3.10	0.01		0.33	0.33		0.33	0.33	0.00	478.23	478.23	0.06	0.00	479.48
Total	**0.73**	**4.87**	**3.10**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**478.23**	**478.23**	**0.06**	**0.00**	**479.48**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.54	6.05	3.39	0.01	0.02	0.18	0.21	0.02	0.18	0.21	0.00	808.87	808.87	0.02	0.00	809.35
Worker	0.99	0.96	9.72	0.01	0.07	0.05	0.12	0.07	0.05	0.12	0.00	1,179.39	1,179.39	0.08	0.00	1,181.12

6584
6270

Total	**1.53**	**7.01**	**13.11**	**0.02**	**0.09**	**0.23**	**0.33**	**0.09**	**0.23**	**0.33**	**0.00**	**1,988.26**	**1,988.26**	**0.10**	**0.00**	**1,990.47**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.67	4.52	3.06	0.01		0.30	0.30		0.30	0.30	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.67**	**4.52**	**3.06**	**0.01**		**0.30**	**0.30**		**0.30**	**0.30**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.49	5.51	3.07	0.01	0.25	0.16	0.42	0.02	0.16	0.19	0.00	808.85	808.85	0.02	0.00	809.28
Worker	0.90	0.86	8.76	0.01	1.51	0.05	1.56	0.07	0.05	0.12	0.00	1,151.71	1,151.71	0.08	0.00	1,153.28
Total	**1.39**	**6.37**	**11.83**	**0.02**	**1.76**	**0.21**	**1.98**	**0.09**	**0.21**	**0.31**	**0.00**	**1,960.56**	**1,960.56**	**0.10**	**0.00**	**1,962.56**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.67	4.52	3.06	0.01		0.30	0.30		0.30	0.30	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.67**	**4.52**	**3.06**	**0.01**		**0.30**	**0.30**		**0.30**	**0.30**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.49	5.51	3.07	0.01	0.02	0.16	0.19	0.02	0.16	0.19	0.00	808.85	808.85	0.02	0.00	809.28
Worker	0.90	0.86	8.76	0.01	0.07	0.05	0.12	0.07	0.05	0.12	0.00	1,151.71	1,151.71	0.08	0.00	1,153.28
Total	**1.39**	**6.37**	**11.83**	**0.02**	**0.09**	**0.21**	**0.31**	**0.09**	**0.21**	**0.31**	**0.00**	**1,960.56**	**1,960.56**	**0.10**	**0.00**	**1,962.56**

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.27	1.81	1.31	0.00		0.11	0.11		0.11	0.11	0.00	207.05	207.05	0.02	0.00	207.50
Total	**0.27**	**1.81**	**1.31**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**207.05**	**207.05**	**0.02**	**0.00**	**207.50**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.19	2.17	1.22	0.00	0.11	0.06	0.17	0.01	0.06	0.07	0.00	349.97	349.97	0.01	0.00	350.14
Worker	0.36	0.33	3.40	0.01	0.65	0.02	0.68	0.03	0.02	0.05	0.00	486.53	486.53	0.03	0.00	487.15
Total	**0.55**	**2.50**	**4.62**	**0.01**	**0.76**	**0.08**	**0.85**	**0.04**	**0.08**	**0.12**	**0.00**	**836.50**	**836.50**	**0.04**	**0.00**	**837.29**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.27	1.81	1.31	0.00		0.11	0.11		0.11	0.11	0.00	207.05	207.05	0.02	0.00	207.50
Total	**0.27**	**1.81**	**1.31**	**0.00**		**0.11**	**0.11**		**0.11**	**0.11**	**0.00**	**207.05**	**207.05**	**0.02**	**0.00**	**207.50**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.19	2.17	1.22	0.00	0.01	0.06	0.07	0.01	0.06	0.07	0.00	349.97	349.97	0.01	0.00	350.14
Worker	0.36	0.33	3.40	0.01	0.03	0.02	0.05	0.03	0.02	0.05	0.00	486.53	486.53	0.03	0.00	487.15
Total	**0.55**	**2.50**	**4.62**	**0.01**	**0.04**	**0.08**	**0.12**	**0.04**	**0.08**	**0.12**	**0.00**	**836.50**	**836.50**	**0.04**	**0.00**	**837.29**

3.6 Paving - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.88	0.57	0.00		0.08	0.08		0.08	0.08	0.00	72.77	72.77	0.01	0.00	73.01
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.14**	**0.88**	**0.57**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.01**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.32	5.32	0.00	0.00	5.32
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.32**	**5.32**	**0.00**	**0.00**	**5.32**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.14	0.88	0.57	0.00		0.08	0.08		0.08	0.08	0.00	72.77	72.77	0.01	0.00	73.01
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total	**0.14**	**0.88**	**0.57**	**0.00**		**0.08**	**0.08**		**0.08**	**0.08**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.01**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.32	5.32	0.00	0.00	5.32
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**5.32**	**5.32**	**0.00**	**0.00**	**5.32**

3.7 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**11.45**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.03	0.03	0.33	0.00	0.06	0.00	0.07	0.00	0.00	0.00	0.00	47.50	47.50	0.00	0.00	47.56
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.06**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**47.50**	**47.50**	**0.00**	**0.00**	**47.56**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.44					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**11.45**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.03	0.03	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.50	47.50	0.00	0.00	47.56
Total	**0.03**	**0.03**	**0.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**47.50**	**47.50**	**0.00**	**0.00**	**47.56**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.84	20.04	42.31	0.15	13.63	0.67	14.30	0.24	0.61	0.85	0.00	12,183.35	12,183.35	0.32	0.00	12,190.16
Unmitigated	5.84	20.04	42.31	0.15	13.63	0.67	14.30	0.24	0.61	0.85	0.00	12,183.35	12,183.35	0.32	0.00	12,190.16
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	4,829.04	4,829.04	4829.04	16,754,915	16,754,915
Office Park	939.60	939.60	939.60	2,720,587	2,720,587
Strip Mall	4,339.93	4,339.93	4339.93	6,926,393	6,926,393
Total	10,108.57	10,108.57	10,108.57	26,401,895	26,401,895

4.3 Trip Type Information

	Miles	Trip %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Industrial Park	14.70	6.60	6.60	59.00	28.00	13.00
Office Park	14.70	6.60	6.60	33.00	48.00	19.00
Strip Mall	14.70	6.60	6.60	16.60	64.40	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	2,194.15	2,194.15	0.22	0.08	2,224.92
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	2,194.15	2,194.15	0.22	0.08	2,224.92
NaturalGas Mitigated	0.13	1.15	0.97	0.01		0.00	0.09		0.00	0.09	0.00	1,252.74	1,252.74	0.02	0.02	1,260.36
NaturalGas Unmitigated	0.13	1.15	0.97	0.01		0.00	0.09		0.00	0.09	0.00	1,252.74	1,252.74	0.02	0.02	1,260.36
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					

6594

Industrial Park	1.93726e+007	0.10	0.95	0.80	0.01		0.00	0.07		0.00	0.07	0.00	1,033.80	1,033.80	0.02	0.02	1,040.0
Office Park	2.77588e+006	0.01	0.14	0.11	0.00		0.00	0.01		0.00	0.01	0.00	148.13	148.13	0.00	0.00	149.03
Strip Mall	1.32685e+006	0.01	0.07	0.05	0.00		0.00	0.00		0.00	0.00	0.00	70.81	70.81	0.00	0.00	71.24
Total		**0.12**	**1.16**	**0.96**	**0.01**		**0.00**	**0.08**		**0.00**	**0.08**	**0.00**	**1,252.74**	**1,252.74**	**0.02**	**0.02**	**1,260.3**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Industrial Park	1.93726e+007	0.10	0.95	0.80	0.01		0.00	0.07		0.00	0.07	0.00	1,033.80	1,033.80	0.02	0.02	1,040.0
Office Park	2.77588e+006	0.01	0.14	0.11	0.00		0.00	0.01		0.00	0.01	0.00	148.13	148.13	0.00	0.00	149.03
Strip Mall	1.32685e+006	0.01	0.07	0.05	0.00		0.00	0.00		0.00	0.00	0.00	70.81	70.81	0.00	0.00	71.24
Total		**0.12**	**1.16**	**0.96**	**0.01**		**0.00**	**0.08**		**0.00**	**0.08**	**0.00**	**1,252.74**	**1,252.74**	**0.02**	**0.02**	**1,260.3**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Industrial Park	1.42894e+007					1,857.62	0.19	0.07	1,883.67
Office Park	1.5022e+006					195.29	0.02	0.01	198.02
Strip Mall	1.08647e+006					141.24	0.01	0.01	143.22
Total						**2,194.15**	**0.22**	**0.09**	**2,224.91**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Industrial Park	1.42894e+007					1,857.62	0.19	0.07	1,883.67
Office Park	1.5022e+006					195.29	0.02	0.01	198.02
Strip Mall	1.08647e+006					141.24	0.01	0.01	143.22
Total						**2,194.15**	**0.22**	**0.09**	**2,224.91**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.34	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	8.34	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.91					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	6.43					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**8.34**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.91					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	6.43					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**8.34**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					4,990.81	213.32	5.47	11,165.10
Unmitigated					4,990.81	213.32	5.47	11,165.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Industrial Park	6942.72 / 0					4,961.57	212.42	5.44	11,109.68
Office Park	20.6171 / 12.6363					20.48	0.63	0.02	38.82
Strip Mall	8.81463 / 5.40252					8.76	0.27	0.01	16.60
Total						**4,990.81**	**213.32**	**5.47**	**11,165.10**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Industrial Park	6942.72 / 0					4,961.57	212.42	5.44	11,109.68
Office Park	20.6171 / 12.6363					20.48	0.63	0.02	38.82
Strip Mall	8.81463 / 5.40252					8.76	0.27	0.01	16.60

Total						4,990.81	213.32	5.47	11,165.10

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					3,574.93	211.27	0.00	8,011.65
Unmitigated					3,574.93	211.27	0.00	8,011.65
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Industrial Park	17378.5					3,527.67	208.48	0.00	7,905.74
Office Park	107.88					21.90	1.29	0.00	49.08
Strip Mall	124.95					25.36	1.50	0.00	56.84
Total						**3,574.93**	**211.27**	**0.00**	**8,011.66**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Industrial Park	17378.5					3,527.67	208.48	0.00	7,905.74
Office Park	107.88					21.90	1.29	0.00	49.08
Strip Mall	124.95					25.36	1.50	0.00	56.84
Total						**3,574.93**	**211.27**	**0.00**	**8,011.66**

9.0 Vegetation

6508

RAAP Existing
Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Industrial Park	674	1000sqft

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**	Pacific Gas & Electric Company
Climate Zone	3		2.2		
		Precipitation Freq (Days)			
			46		

1.3 User Entered Comments

Project Characteristics - CO2 Intensity based on California Public Utilities Commission GHG Calculator version 3c.

Land Use - *

Vehicle Trips - Trip rates based on traffic report (Fehr & Peers, 2011).

Energy Use - *

Area Coating -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.51	9.34	8.69	0.01	0.80	0.51	1.31	0.13	0.51	0.64	0.00	1,270.39	1,270.39	0.12	0.00	1,272.82
2012	5.28	3.36	3.60	0.01	0.30	0.20	0.50	0.01	0.20	0.21	0.00	539.68	539.68	0.05	0.00	540.64
Total	**6.79**	**12.70**	**12.29**	**0.02**	**1.10**	**0.71**	**1.81**	**0.14**	**0.71**	**0.85**	**0.00**	**1,810.07**	**1,810.07**	**0.17**	**0.00**	**1,813.46**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	1.51	9.34	8.69	0.01	0.25	0.51	0.76	0.13	0.51	0.64	0.00	1,270.39	1,270.39	0.12	0.00	1,272.82
2012	5.28	3.36	3.60	0.01	0.01	0.20	0.21	0.01	0.20	0.21	0.00	539.68	539.68	0.05	0.00	540.64
Total	**6.79**	**12.70**	**12.29**	**0.02**	**0.26**	**0.71**	**0.97**	**0.14**	**0.71**	**0.85**	**0.00**	**1,810.07**	**1,810.07**	**0.17**	**0.00**	**1,813.46**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.41	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	2,130.45	2,130.45	0.10	0.04	2,145.89

6402

Mobile	1.52	5.50	13.12	0.01	1.29	0.17	1.47	0.06	0.17	0.23	0.00	1,477.17	1,477.17	0.09	0.00	1,478.99
Waste						0.00	0.00		0.00	0.00	1,683.89	0.00	1,683.89	99.51	0.00	3,773.70
Water						0.00	0.00		0.00	0.00	0.00	4,340.81	4,340.81	101.39	2.60	7,275.53
Total	**4.98**	**5.95**	**13.50**	**0.01**	**1.29**	**0.17**	**1.50**	**0.06**	**0.17**	**0.26**	**1,683.89**	**7,948.43**	**9,632.32**	**201.09**	**2.64**	**14,674.11**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.41	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	2,130.45	2,130.45	0.10	0.04	2,145.89
Mobile	1.52	5.50	13.12	0.01	1.29	0.17	1.47	0.06	0.17	0.23	0.00	1,477.17	1,477.17	0.09	0.00	1,478.99
Waste						0.00	0.00		0.00	0.00	1,683.89	0.00	1,683.89	99.51	0.00	3,773.70
Water						0.00	0.00		0.00	0.00	0.00	4,340.81	4,340.81	101.39	2.60	7,275.53
Total	**4.98**	**5.95**	**13.50**	**0.01**	**1.29**	**0.17**	**1.50**	**0.06**	**0.17**	**0.26**	**1,683.89**	**7,948.43**	**9,632.32**	**201.09**	**2.64**	**14,674.11**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.10	0.80	0.46	0.00		0.04	0.04		0.04	0.04	0.00	68.12	68.12	0.01	0.00	68.29
Total	**0.10**	**0.80**	**0.46**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**68.12**	**68.12**	**0.01**	**0.00**	**68.29**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	2.08	0.00	0.00	2.08
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.08**	**2.08**	**0.00**	**0.00**	**2.08**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.10	0.80	0.46	0.00		0.04	0.04		0.04	0.04	0.00	68.12	68.12	0.01	0.00	68.29
Total	**0.10**	**0.80**	**0.46**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**68.12**	**68.12**	**0.01**	**0.00**	**68.29**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	2.08	0.00	0.00	2.08
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.08**	**2.08**	**0.00**	**0.00**	**2.08**

3.3 Site Preparation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.09	0.00	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.45	0.25	0.00		0.02	0.02		0.02	0.02	0.00	36.27	36.27	0.00	0.00	36.36
Total	**0.05**	**0.45**	**0.25**	**0.00**	**0.09**	**0.02**	**0.11**	**0.05**	**0.02**	**0.07**	**0.00**	**36.27**	**36.27**	**0.00**	**0.00**	**36.36**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	1.25	0.00	0.00	1.25
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**	**0.00**	**0.00**	**1.25**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.09	0.00	0.09	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.45	0.25	0.00		0.02	0.02		0.02	0.02	0.00	36.27	36.27	0.00	0.00	36.36
Total	**0.05**	**0.45**	**0.25**	**0.00**	**0.09**	**0.02**	**0.11**	**0.05**	**0.02**	**0.07**	**0.00**	**36.27**	**36.27**	**0.00**	**0.00**	**36.36**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6604

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	1.25	0.00	0.00	1.25
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**	**0.00**	**0.00**	**1.25**

3.4 Grading - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.13	0.00	0.13	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.20	1.66	0.87	0.00		0.08	0.08		0.08	0.08	0.00	147.69	147.69	0.02	0.00	148.03
Total	**0.20**	**1.66**	**0.87**	**0.00**	**0.13**	**0.08**	**0.21**	**0.05**	**0.08**	**0.13**	**0.00**	**147.69**	**147.69**	**0.02**	**0.00**	**148.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.15	4.15	0.00	0.00	4.16
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.15**	**4.15**	**0.00**	**0.00**	**4.16**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.13	0.00	0.13	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.20	1.66	0.87	0.00		0.08	0.08		0.08	0.08	0.00	147.69	147.69	0.02	0.00	148.03
Total	**0.20**	**1.66**	**0.87**	**0.00**	**0.13**	**0.08**	**0.21**	**0.05**	**0.08**	**0.13**	**0.00**	**147.69**	**147.69**	**0.02**	**0.00**	**148.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15	4.15	0.00	0.00	4.16
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.15**	**4.15**	**0.00**	**0.00**	**4.16**

3.5 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.61	4.02	2.40	0.00		0.28	0.28		0.28	0.28	0.00	366.46	366.46	0.05	0.00	367.50
Total	**0.61**	**4.02**	**2.40**	**0.00**		**0.28**	**0.28**		**0.28**	**0.28**	**0.00**	**366.46**	**366.46**	**0.05**	**0.00**	**367.50**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.19	2.06	1.16	0.00	0.08	0.06	0.14	0.01	0.06	0.07	0.00	252.57	252.57	0.01	0.00	252.73
Worker	0.35	0.35	3.49	0.00	0.49	0.02	0.51	0.02	0.02	0.04	0.00	391.81	391.81	0.03	0.00	392.42
Total	**0.54**	**2.41**	**4.65**	**0.00**	**0.57**	**0.08**	**0.65**	**0.03**	**0.08**	**0.11**	**0.00**	**644.38**	**644.38**	**0.04**	**0.00**	**645.15**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.61	4.02	2.40	0.00		0.28	0.28		0.28	0.28	0.00	366.46	366.46	0.05	0.00	367.50
Total	**0.61**	**4.02**	**2.40**	**0.00**		**0.28**	**0.28**		**0.28**	**0.28**	**0.00**	**366.46**	**366.46**	**0.05**	**0.00**	**367.50**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.19	2.06	1.16	0.00	0.01	0.06	0.07	0.01	0.06	0.07	0.00	252.57	252.57	0.01	0.00	252.73
Worker	0.35	0.35	3.49	0.00	0.02	0.02	0.04	0.02	0.02	0.04	0.00	391.81	391.81	0.03	0.00	392.42

Total	**0.54**	**2.41**	**4.65**	**0.00**	**0.03**	**0.08**	**0.11**	**0.03**	**0.08**	**0.11**	**0.00**	**644.38**	**644.38**	**0.04**	**0.00**	**645.15**

3.5 Building Construction - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.28	1.87	1.19	0.00		0.13	0.13		0.13	0.13	0.00	183.23	183.23	0.02	0.00	183.71
Total	**0.28**	**1.87**	**1.19**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**183.23**	**183.23**	**0.02**	**0.00**	**183.71**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.08	0.94	0.53	0.00	0.04	0.03	0.07	0.00	0.03	0.03	0.00	126.26	126.26	0.00	0.00	126.34
Worker	0.16	0.16	1.58	0.00	0.25	0.01	0.25	0.01	0.01	0.02	0.00	191.44	191.44	0.01	0.00	191.72
Total	**0.24**	**1.10**	**2.11**	**0.00**	**0.29**	**0.04**	**0.32**	**0.01**	**0.04**	**0.05**	**0.00**	**317.70**	**317.70**	**0.01**	**0.00**	**318.06**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.28	1.87	1.19	0.00		0.13	0.13		0.13	0.13	0.00	183.23	183.23	0.02	0.00	183.71
Total	**0.28**	**1.87**	**1.19**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**183.23**	**183.23**	**0.02**	**0.00**	**183.71**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.08	0.94	0.53	0.00	0.00	0.03	0.03	0.00	0.03	0.03	0.00	126.26	126.26	0.00	0.00	126.34
Worker	0.16	0.16	1.58	0.00	0.01	0.01	0.02	0.01	0.01	0.02	0.00	191.44	191.44	0.01	0.00	191.72
Total	**0.24**	**1.10**	**2.11**	**0.00**	**0.01**	**0.04**	**0.05**	**0.01**	**0.04**	**0.05**	**0.00**	**317.70**	**317.70**	**0.01**	**0.00**	**318.06**

3.6 Paving - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.36	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.56
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.36**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.03
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.03**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.36	0.21	0.00		0.03	0.03		0.03	0.03	0.00	26.46	26.46	0.00	0.00	26.56
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.36**	**0.21**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**26.46**	**26.46**	**0.00**	**0.00**	**26.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.03
Total	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.03**

6512

3.7 Architectural Coating - 2012

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.68					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	**4.69**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.55**	**2.55**	**0.00**	**0.00**	**2.56**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.71	7.71	0.00	0.00	7.72
Total	**0.01**	**0.01**	**0.06**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**7.71**	**7.71**	**0.00**	**0.00**	**7.72**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.68					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Off-Road	0.01	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.55	2.55	0.00	0.00	2.56
Total	**4.69**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.55**	**2.55**	**0.00**	**0.00**	**2.56**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.71	7.71	0.00	0.00	7.72
Total	**0.01**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**7.71**	**7.71**	**0.00**	**0.00**	**7.72**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

6654

Mitigated	1.52	5.50	13.12	0.01	1.29	0.17	1.47	0.06	0.17	0.23	0.00	1,477.17	1,477.17	0.09	0.00	1,478.99
Unmitigated	1.52	5.50	13.12	0.01	1.29	0.17	1.47	0.06	0.17	0.23	0.00	1,477.17	1,477.17	0.09	0.00	1,478.99
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	721.18	721.18	721.18	2,502,218	2,502,218
Total	721.18	721.18	721.18	2,502,218	2,502,218

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Industrial Park	14.70	6.60	6.60	59.00	28.00	13.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	1,636.98	1,636.98	0.09	0.03	1,649.42
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,636.98	1,636.98	0.09	0.03	1,649.42
NaturalGas Mitigated	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	493.47	493.47	0.01	0.01	496.47
NaturalGas Unmitigated	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	493.47	493.47	0.01	0.01	496.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Industrial Park	9.24728e+006	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	493.47	493.47	0.01	0.01	496.47
Total		**0.05**	**0.45**	**0.38**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**493.47**	**493.47**	**0.01**	**0.01**	**496.47**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Industrial Park	9.24728e+006	0.05	0.45	0.38	0.00		0.00	0.03		0.00	0.03	0.00	493.47	493.47	0.01	0.01	496.47
Total		**0.05**	**0.45**	**0.38**	**0.00**		**0.00**	**0.03**		**0.00**	**0.03**	**0.00**	**493.47**	**493.47**	**0.01**	**0.01**	**496.47**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Industrial Park	6.82088e+006					1,636.98	0.09	0.03	1,649.42
Total						**1,636.98**	**0.09**	**0.03**	**1,649.42**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Industrial Park	6.82088e+006					1,636.98	0.09	0.03	1,649.42
Total						**1,636.98**	**0.09**	**0.03**	**1,649.42**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	3.41	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	3.41	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.78					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**3.41**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.78					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	2.63					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**3.41**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					4,340.81	101.39	2.60	7,275.53
Unmitigated					4,340.81	101.39	2.60	7,275.53
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Industrial Park	3314.02 / 0					4,340.81	101.39	2.60	7,275.53
Total						**4,340.81**	**101.39**	**2.60**	**7,275.53**

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	tons/yr				MT/yr			
Industrial Park	3314.02 / 0					4,340.81	101.39	2.60	7,275.53
Total						**4,340.81**	**101.39**	**2.60**	**7,275.53**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					1,683.89	99.51	0.00	3,773.70
Unmitigated					1,683.89	99.51	0.00	3,773.70
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Industrial Park	8295.38					1,683.89	99.51	0.00	3,773.70

Total						1,683.89	99.51	0.00	3,773.70

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Industrial Park	8295.38					1,683.89	99.51	0.00	3,773.70
Total						1,683.89	99.51	0.00	3,773.70

9.0 Vegetation

Riverbank Project - Modesto, Ca
Claus Road Traffic Data and PM2.5 - 45 mph
North of Project Site

Analysis Year = *2020*

Vehicle Type	2020 Caltrans Number Vehicles (veh/day)	2020 Number Vehicles (veh/day)	2020 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors: Diesel Vehicles DPM (g/VMT)	Emission Factors: All Vehicles Exhaust PM2.5 (g/VMT)
LDA	3,259	3,259	0.33%	11	45	0.0086	0.0012
LDT	1,698	1,698	0.08%	1	45	0.0128	0.0015
MDT	0	0	12.61%	0	45	0.0205	0.0028
HDT	502	502	92.55%	465	45	0.0625	0.0592
Total	5,459	5,459	-	477	45	-	-
Mix Avg Emission Factor						**0.06113**	**0.00664**
Increase From 2020		1.00					
Vehicles/Direction		2,730		238			
Avg Vehicles/Hour/Direction		**114**		**9.9**			

Traffic Data Year = *2020*

	Total	Total Truck	Truck by Axle 2	3	4	5
Claus Rd - North of Project Site	5,459	502	0	167	167	167

Riverbank Project - Modesto, Ca
Claus Road Traffic Data and PM2.5 - 45 mph
South of Project Site

Analysis Year = *2020*

Vehicle Type	2020 Caltrans Number Vehicles (veh/day)	2020 Number Vehicles (veh/day)	2020 Percent Diesel	Number Diesel Vehicles (veh/day)	Vehicle Speed (mph)	Emission Factors: Diesel Vehicles DPM (g/VMT)	Emission Factors: All Vehicles Exhaust PM2.5 (g/VMT)
LDA	2,777	2,777	0.33%	9	45	0.0086	0.0012
LDT	1,446	1,446	0.08%	1	45	0.0128	0.0015
MDT	0	0	12.61%	0	45	0.0205	0.0028
HDT	428	428	92.55%	396	45	0.0625	0.0592
Total	4,651	4,651	-	406	45	-	-
Mix Avg Emission Factor						**0.06113**	**0.00664**
Increase From 2020		1.00					
Vehicles/Direction		2,326		203			
Avg Vehicles/Hour/Direction		**97**		**8.5**			

Traffic Data Year = *2020*

	Total	Total Truck	Truck by Axle 2	3	4	5
Claus Rd - South of Project Site	4,651	428	0	143	143	143

Riverbank Project - Modesto, Ca
Claus Road
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2020

Group Link	Description	Direction	No. Lanes	Link Length (m)	Link Width (ft)	Link Width (m)	Release Height (m)	Diesel ADT	Average Speed (mph)	Average VPH Diesel Vehicles						Composite Average Emissions (g/mi)
										Average Vehicles per Hour	LDA	LDT	LDA & LDT	MDT	HDT	
NB_N_Claus	Northbound Claus Rd North of Site	N	1	1161	12	3.7	1.8	238	45	9.9	0.2	0.0	0.3	0.0	9.7	0.06113
SB_N_Claus	Southbound Claus Rd North of Site	S	1	1159	12	3.7	1.8	238	45	9.9	0.2	0.0	0	0.0	9.7	0.06113
NB_S_Claus	Northbound Claus Rd South of Site	N	1	1555	12	3.7	1.8	203	45	8.5	0.2	0.0	0.2	0.0	8.3	0.06113
SB_S_Claus	Southbound Claus Rd South of Site	S	1	1555	12	3.7	1.8	203	45	8.5	0.2	0.0	0	0.0	8.3	0.06113

Riverbank Project, Modesto, CA
AERMOD DPM Risk Modeling Parameters and Maximum Cancer Risk From Claus Rd, Modesto
DPM Cancer Risks from DPM Emissions in 2020 for 70 Years

Receptor Information

Number of Receptors	65
Receptor Height =	ground level
Receptor distances =	variable

Meteorological Conditions

Modesto Airport - Hourly Met Data	2005 - 2009
Land Use Classification	Rural

Cancer Risk Calculation Method

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10^{-6} / AT

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged.
10^{-6} = Conversion factor

Inhalation Dose Factors

Exposure Type	Value[1] DBR (L/kg BW-day)	A (-)	Exposure (hr/day)	EF (days/yr)	ED (Years)	AT (days)
Residential (70-Year)	393	1	24	350	70	25,550

[1] Default values recommended by OEHHA& Bay Area Air Quality Management District

Cancer Risk (per million) = CPF x Inhalation Dose x 1.0E6
= URF x Cair

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
URF =Unit risk factor (cancer risk per $\mu g/m^3$)

Diesel Particulate Matter Unit Risk Factors

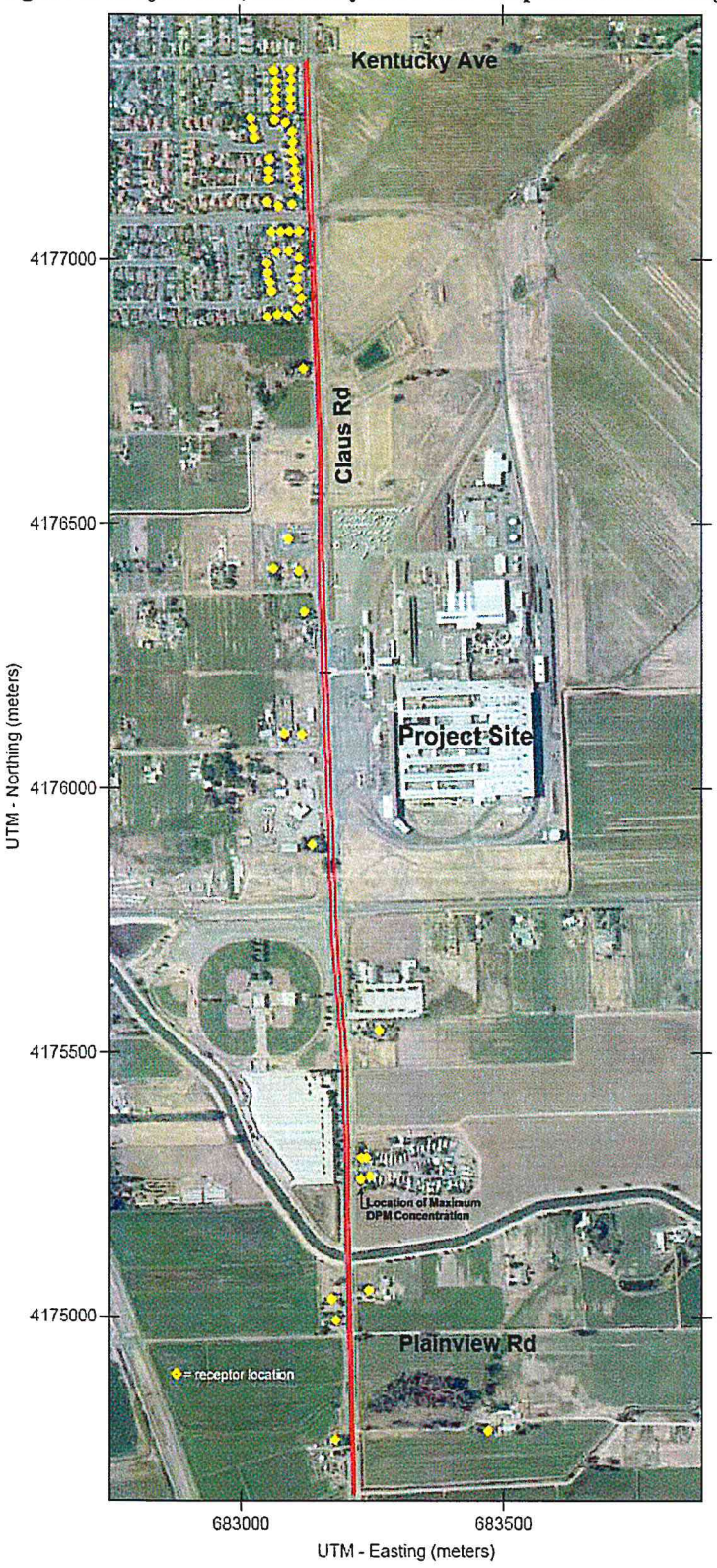
Exposure Type	CPF $(mg/kg\text{-}day)^{-1}$	URF *(Risk/million/$\mu g/m^3$)*
Residential (70-Yr Exposure)	1.10E+00	414.5

MEI Cancer Risk Calculation from Claus Rd DPM emissions

Meteorological Data Years	Maximum Modeled Annual DPM Concentration (ug/m^3) 2020
2005 - 2009	0.0158
70-yr Maximum Risk[a]	6.5

Notes:
Maximum concentrations occur at UTM 683,228.5 m east, 4,175,260.6 m north.
a Maximum cancer risk (per million) calculated assuming constant exposure over a 70-year period to 2020 DPM Concentration

Figure 1. Project Site, Roadway Links for Dispersion Modeling, and Receptor Locations



Riverbank - On-Site Truck Distribution Methods and Assumptions

The distribution of truck travel within the project area was based on trip data from the traffic report and initial information on the location, size, and types of land uses for the project development areas. The project would include areas for research and development (R&D) and industrial uses at the northern and southern portions of the site, retail development adjacent to Claus road near the central and southern portions of the site, and realignment of existing parking areas in the central portion of the site near Claus road. These areas are identified in Figures 1. Also shown on the figures are potential truck routes within each area that were used for modeling.

Based on the traffic report the total daily trips for all vehicles will be 10,110, with 930 daily truck trips (see trip generation table below), or 9.2% trucks. The truck trips were calculated for industrial land use only. There were no truck trips calculated for the other land uses (e.g., R&D and retail). The 10,110/ 930 vehicle/truck trips include trips from existing uses at the site. That is they include both existing and proposed trips. Presumably, some of the existing trips were for trucks, although the breakdown of vehicle type for the existing trips was not provided. New project trips were reported as 9,390 daily trips for all vehicles. Assuming 9.2% trucks, the number of existing truck trips was estimated as 67.

In order to distribute the truck trips to the different development areas, it was assumed that 863 trips (930-67) were distributed between the new R&D/industrial areas bases on the estimated sizes of the areas. The remaining 67 trips were distributed between the two retail areas and to the main road into the existing industrial area (which would include some new industrial uses). 50 trips were assigned to the main road, 11 trips to the central retail area, and 6 trips to the southern retail area. The truck trip distribution calculations are shown in the table below. Figure 1 shows the number of daily trucks assigned to each development area. There would be 2 trips per daily truck.

TABLE 6
PROJECT TRIP GENERATION ESTIMATES

Land Use	ITE Code	Units	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Industrial	Passenger Vehicle Trips[1]	1,411,542 square feet	127	57	184	70	170	240	3,900
Industrial	Truck Trips[1]	1,411,542 square feet	28	42	70	42	28	70	930
Total Industrial			155	99	254	112	198	310	4,830
R&D	760[2]	116,366 square feet	118	24	142	19	106	125	940
Retail	820[3]	119,058 square feet	73	46	119	218	226	444	5,110
Pass-By Trips[4]			0	0	0	-34	-34	-68	-770
Total Trips			*346*	*170*	*169*	*315*	*496*	*811*	*10,110*
Less Existing Uses[5]			-27	-8	-35	-8	-36	-44	-720
Potential Net New Trip Generation			***319***	***161***	***480***	***307***	***460***	***767***	***9,390***

Notes:

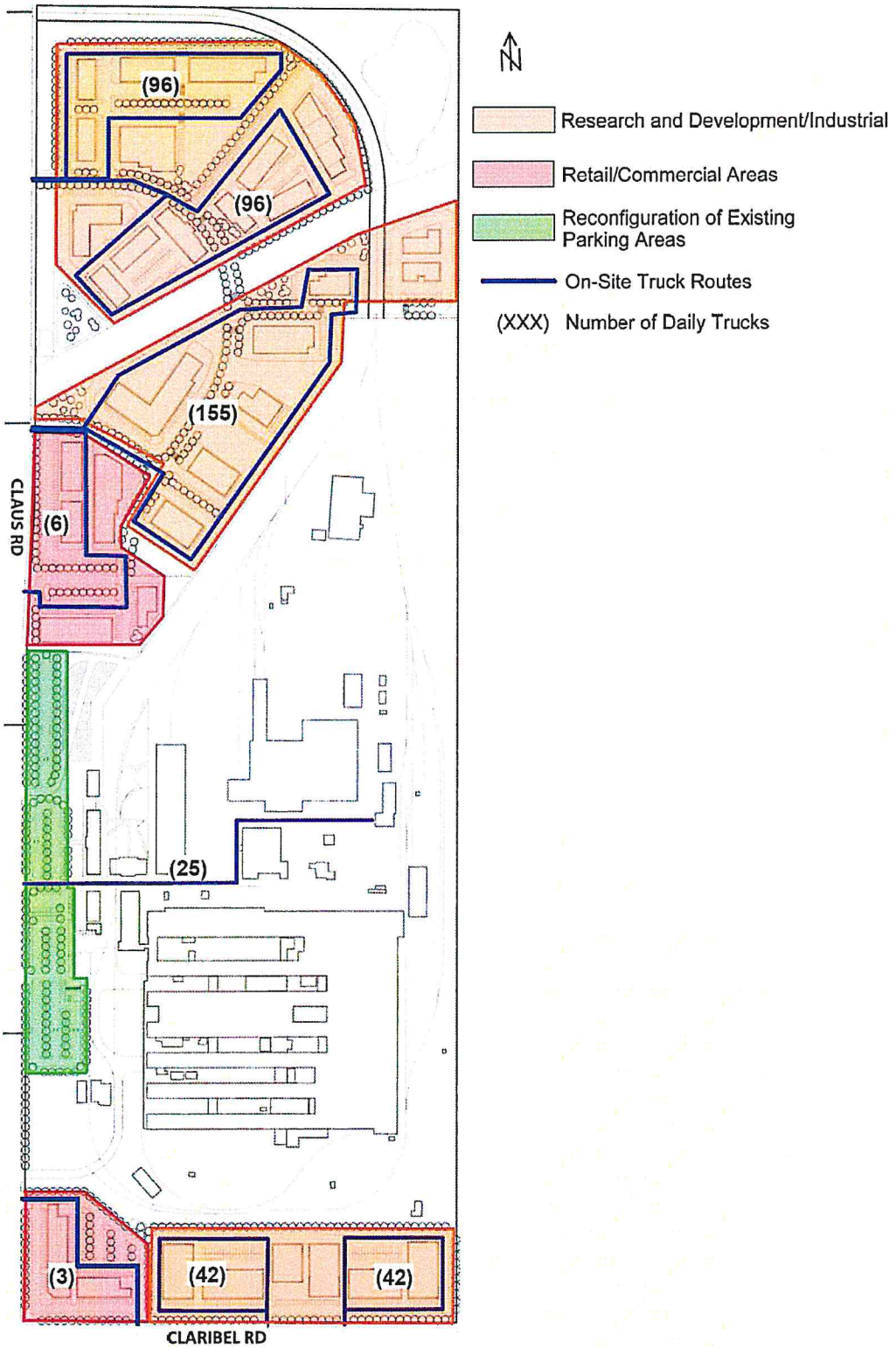
1. Trip generation based on documented trip generation rates for similar industrial facilities :
   AM: T = 0.19 (X); Enter = 61%, Exit=39% (25% Trucks)
   PM: T = 0.22(X); Enter = 36%, Exit = 64% (22% Trucks)
   Daily: 3.42 (X) (19 % Trucks)
   Where: T = trips generated, X = 1,000 square feet, Ln = natural log
2. Trip generation based on Institute of Transportation Engineers (ITE), Trip Generation, (8th Edition) regression equations for Research and Development Center (Land Use Code 760) :
   AM: 1.22 (X); Enter = 83%, Exit=17%
   PM: 1.07 (X); Enter = 15%, Exit = 85%
   Daily: 8.11 (X)
   Where: T = trips generated, X = 1,000 square feet, Ln = natural log
3. Trip generation based on Institute of Transportation Engineers (ITE), Trip Generation, (8th Edition) regression equations for Shopping Center (Land Use Code 820) :
   AM: Ln(T) = 0.59 Ln(X) + 2.32; Enter = 61%, Exit=39%
   PM: Ln(T) = 0.67 Ln(X) + 3.37; Enter = 49%, Exit = 51%
   Daily: Ln(T) = 0.65 Ln(X) + 5.83
   Where: T = trips generated, X = 1,000 square feet, Ln = natural log
4. Trip pass-by rate based on Institute of Transportation Engineers (ITE), Trip Generation Handbook average pass-by for Shopping Center (Land Use Code 820). Average Weekday pass-by rate: 15% during the PM peak hour. No pass-by rate assumed during the AM peak hour, a 15% pass-by rate assumed for daily trip total.
5. Based on driveway counts conducted at the existing RAAP driveways.

Source: *Trip Generation* (8th Edition), ITE, 2008; *Trip Generation Manual*, ITE, 2004, and Fehr & Peers, 2011.

Trip Distribution Ca

Area/Roads
North R & D and Indust
North Road A
North Road B
Central R & D and Indu
Central Road
South R & D and Indust
South Road A
South Road B
Central Retail Area
South Retail Area
Main Road
Total

Figure 1. Project Site, Development Areas, On-Site Truck Routes, and Daily Truck Traffic



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Attachment

Riverbank On-Site Operation Truck DPM Emissions 2020

Truck Route	Line Source Name	Vehicle Type[1]	Daily Number Trucks	Total Annual Trucks[2]	Travel Speed (mph)	Idle Emission Factor[3] (g/hr)	PM2.5 Emission Factor[3] (g/mi)	Operation[4] Schedule (hrs/day)	Travel Distance (feet)	Travel Distance (miles)	Annual DPM Emissions (lb/year) Travel	Annual DPM Emissions (lb/year) Idle[5]	Average Hourly Emissions (lb/hr)
On-Site Truck Travel													
North R & D and Industrial Area													
North Road A	A_N_RDI	HHDT	96	35,040	15	0.1227	0.0675	24	2,383	0.45	2.35	1.58	4.49E-04
North Road B	B_N_RDI	HHDT	96	35,040	15	0.1227	0.0675	24	3,161	0.60	3.12	1.58	5.37E-04
Central R & D and Industrial Area													
Central Road	R_C_RDI	HHDT	155	56,575	15	0.1227	0.0675	24	3,409	0.65	5.44	2.55	9.12E-04
South R & D and Industrial Area													
South Road A	A_S_RDI	HHDT	42	15,330	15	0.1227	0.0675	24	1,211	0.23	0.52	0.69	1.39E-04
South Road B	B_S_RDI	HHDT	42	15,330	15	0.1227	0.0675	24	1,171	0.22	0.51	0.69	1.37E-04
Central Retail Area	R_C_RTL	HHDT	6	2,190	15	0.1227	0.0675	24	1,208	0.23	0.07	0.10	1.98E-05
South Retail Area	R_S_RTL	HHDT	3	1,095	15	0.1227	0.0675	24	777	0.15	0.02	0.05	8.38E-06
Main Road	R-MAIN	HHDT	25	9,125	15	0.1227	0.0675	24	2,679	0.51	0.69	0.41	1.26E-04

[1] HHDT = heavy heavy duty truck

[2] Annual trips - Based on 365 days of operation

[3] Emission factors from EMFAC2011 for San Joaquin Valley for operation in 2020 and assumes all trucks are diesel.

[4] Operation hours assumed to be 24 hours per day, 365 days per year

[5] Assumes 5 minutes idle per trip (10 minutes total per truck)

Riverbank Project, Modesto, CA
AERMOD DPM Risk Modeling Parameters and Maximum Cancer Risk From On-Site Truck Travel
DPM Cancer Risks from DPM Emissions in 2020 for 70 Years

Receptor Information

Number of Receptors	72
Receptor Height =	1.5 meters
Receptor distances =	variable

Meteorological Conditions

Modesto Airport - Hourly Met Data	2005 - 2009
Land Use Classification	Rural

Cancer Risk Calculation Method

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10^{-6} / AT

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged.
10^{-6} = Conversion factor

Inhalation Dose Factors

Exposure Type	Value[1] DBR (L/kg BW-day)	A (-)	Exposure (hr/day)	EF (days/yr)	ED (Years)	AT (days)
Residential (70-Year)	393	1	24	350	70	25,550

[1] Default values recommended by OEHHA& Bay Area Air Quality Management District

Cancer Risk (per million) = CPF x Inhalation Dose x 1.0E6
= URF x Cair

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
URF =Unit risk factor (cancer risk per $\mu g/m^3$)

Diesel Particulate Matter Unit Risk Factors

Exposure Type	CPF $(mg/kg\text{-}day)^{-1}$	URF *(Risk/million/$\mu g/m^3$)*
Residential (70-Yr Exposure)	1.10E+00	414.5

MEI Cancer Risk Calculation from Claus Rd DPM emissions

Meteorological Data Years	Maximum Modeled Annual DPM Concentration (ug/m^3) 2020
2005 - 2009	0.0103
70-yr Maximum Risk[a]	4.3

Notes:
Maximum concentrations occur at UTM 683,107.9 m east, 4,176,965.0 m north.
a Maximum cancer risk (per million) calculated assuming constant exposure over a 70-year period to 2020 DPM Concentration

Riverbank Project, Modesto, CA
AERMOD DPM Risk Modeling Parameters and Maximum Cancer Risk
Cumulative Cancer Risk from On-Site & Off-Site Truck Travel
DPM Cancer Risks from DPM Emissions in 2020 for 70 Years

Receptor Information

Number of Receptors	72
Receptor Height =	1.5 meters
Receptor distances =	variable

Meteorological Conditions

Modesto Airport - Hourly Met Data	2005 - 2009
Land Use Classification	Rural

Cancer Risk Calculation Method

Inhalation Dose = C_{air} x DBR x A x EF x ED x 10^{-6} / AT

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AT = Averaging time period over which exposure is averaged.
10^{-6} = Conversion factor

Inhalation Dose Factors

Exposure Type	Value[1] DBR (L/kg BW-day)	A (-)	Exposure (hr/day)	EF (days/yr)	ED (Years)	AT (days)
Residential (70-Year)	393	1	24	350	70	25,550

[1] Default values recommended by OEHHA& Bay Area Air Quality Management District

Cancer Risk (per million) = CPF x Inhalation Dose x 1.0E6
= URF x Cair

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
URF =Unit risk factor (cancer risk per $\mu g/m^3$)

Diesel Particulate Matter Unit Risk Factors

Exposure Type	CPF $(mg/kg\text{-}day)^{-1}$	URF *(Risk/million/$\mu g/m^3$)*
Residential (70-Yr Exposure)	1.10E+00	414.5

MEI Cancer Risk Calculation from Claus Rd DPM emissions

Meteorological Data Years	Maximum Modeled Annual DPM Concentration (ug/m^3) 2020
2005 - 2009	0.0217
70-yr Maximum Risk[a]	9.0

Notes:
Maximum concentrations occur at UTM 683,107.9 m east, 4,176,965.0 m north.
a Maximum cancer risk (per million) calculated assuming constant exposure over a 70-year period to 2020 DPM Concentration

6583

APPENDIX H

COMMENTS RECEIVED ON THE DRAFT EIR

COMMENT LETTER # SA1

RECEIVED APR 0 1 2013

STATE OF CALIFORNIA Edmund G. Brown, Jr., *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
(916) 657-5390 - FAX

March 29, 2013

Ms. Debbie Olson, Planner

City of Riverbank

Riverbank Local Development Authority

5300 Klaus Road, Suite 1
Modesto, CA 95357

RE: SCH# 2011022015 CEQA Notice of Completion; draft Environmental Impact Report (DEIR) – "**Riverbank Army Ammunition Plant Specific Plan Project;**" located on 143-acres in the City of Riverbank; Stanislaus County, California

Dear Ms. Olson:

The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites. SA1-1

The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resources, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064(b)). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources, which we know that it has. The NAHC recommends that known cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report. SA1-2

If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.
Contact has been made to the Native American Heritage Commission for :a Sacred

Lands File Check, and cultural resources have not been identified to your agency. A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

SA1-3

Sincerely,

Dave Singleton
Program Analyst
(916) 653-6251

CC: State Clearinghouse

Attachment: Native American Contacts list

Native American Contacts
Stanislaus County
March 29, 2013

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville , CA 93258
chairman@tulerivertribe-nsn.
(559) 781-4271
(559) 781-4610 FAX
Yokuts

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200
Mariposa , CA 95338
tony_brochini@nps.gov
209-628-0085 cell
Miwok
Paulte
Northern Valley Yokut

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200
Sacramento , CA 95811
rhonda@buenavistatribe.
916 491-0011
916 491-0012 - fax
Me-Wuk / Miwok

Tuolumne Band of Me-Wuk
Kevin Day, Chairperson
P.O. Box 699
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax
Me-Wuk - Miwok

California Valley Miwok Tribe
Silvia Burley, Chairperson
10601 N Escondido PL
Stockton , CA 95212
office@cvmt.net
209-931-4567
209-931-4333
Miwok

Tuolumne Band of Me-Wuk
Mary Camp, Tribal Administrator
P.O. Box 699
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax
Me-Wuk - Miwok

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
(209) 887-3415
canutes@verizon.net
Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Calaveras Band of Mi-Wuk Indians
Gloria Grimes, Chairperson
PO Box 899
West Point , CA 95255
CBmiwukindians@aol.com
(209-470-8688
Mi-Wuk

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011022015; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Riverbank Army Ammunition Plan Specific Plan; located in the City of Riverbank; Stanislaus County, California.

Native American Contacts
Stanislaus County
March 29, 2013

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200
Mariposa , CA 95338
209-966-3690

Miwok
Pauite
Northern Valley Yokut

Calaveras Band of Mi-Wuk Indians
Adam Lewis, Tribal Preservation Assistant
PO Box 899
West Point , CA 95255

Mi-Wuk

Tuolumne Band of Me-Wuk
Stanley Cox, Cultural Resources Dr
P.O. Box 699
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Me-Wuk - Miwok

Tuolumne Band of Me-Wuk
Reba Fuller
P.O. Box 699
Tuolumne , CA 95379
rfuller@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Me-Wuk - Miwok

Calaveras Band of Mi-Wuk Indians
Debra Grimes, Cultural Res. Specialist
PO Box 1015
West Point , CA 95255
Dmiwuk@aol.com
209-770-4137
209-470-8688

Mi-Wuk

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011022015; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Riverbank Army Ammunition Plan Specific Plan; located in the City of Riverbank; Stanislaus County, California.

COMMENT LETTER # SA2

CALIFORNIA Water Boards

EDMUND G. BROWN JR. GOVERNOR

MATTHEW RODRIQUEZ SECRETARY FOR ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

6 May 2013

Debbie Olson
City of Riverbank
5300 Claus Road, Suite 1
Modesto, CA 95357

CERTIFIED MAIL
7012 2210 0002 1419 9937

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, RIVERBANK ARMY AMMUNITION PLANT SPECIFIC PLAN PROJECT, SCH NO. 2011022015, STANISLAUS COUNTY

Pursuant to the State Clearinghouse's 27 March 2013 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environmental Impact Report* for the Riverbank Army Ammunition Plant Specific Plan Project, located in Stanislaus County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

SA2-1

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

SA2-2

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process. SA2-3

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ. SA2-4

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. SA2-5

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

SA2-6

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

SA2-7

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.

Original signed by Angela M. Jee

for Trevor Cleak
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

COMMENT LETTER # SA3

STATE OF CALIFORNIA--BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 10
P.O. BOX 2048, STOCKTON, CA 95201
(1976 E. DR. MARTIN LUTHER KING JR. BLVD. 95205)
PHONE (209) 948-7943
FAX (209) 948-3670
TTY 711

Flex your power!
Be energy efficient!

May 10, 2013

10-STA-108-PM 33.38
RAAP Specific Plan

Debbie Olson
City of Riverbank
5300 Claus Road, Suite 1
Riverbank, CA 95357

Dear Ms. Olson:

The California Department of Transportation (Department) appreciates the opportunity to review and comment on the DEIR for the for the RAAP Specific Plan which includes 173 acres. This includes 146 acre primary site of which portions are currently underdeveloped and a 27 acre evaporation pond. The Department has the following comments: **SA3-1**

1. The existing plus approved/pending projects scenario should be included as part of the scenarios being analyzed. **SA3-2**

2. Please provide the electronic files that will be used to analyze the traffic study when the traffic study is submitted. **SA3-3**

3. Various intersections along SR-108 do not meet STAA off-tracking requirements for turning movements. The project needs to consider the impact of any potentially generated STAA truck traffic turning movements at intersections due to its development since this would create a safety issue at these intersections. **SA3-4**

Please refer to the letter to the City of Riverbank dated July 19, 2010 regarding related intersections along SR 108 that do not meet STAA. If a copy is needed for reference, please contact the Joshua Swearingen (contact information below). **SA3-5**

If you have any questions or would like to discuss our comments in more detail, please contact Joshua Swearingen at (209) 948-7142 (e-mail: joshua_swearingen@dot.ca.gov) or me at (209) 941-1921.

Sincerely,

Joshua Swearingen
For
Tom Dumas, Chief
Office of Metropolitan Planning

"Caltrans improves mobility across California"

COMMENT LETTER # SA4

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

RECEIVED MAY 14 2013

May 13, 2013

Debbie Olson
City of Riverbank
5300 Claus Road, Suite 1
Modesto, CA 95357

Subject: Riverbank Army Ammunition Plant Specific Plan
SCH#: 2011022015

Dear Debbie Olson:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on May 10, 2013, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

SA4-1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	2011022015
Project Title	Riverbank Army Ammunition Plant Specific Plan
Lead Agency	Riverbank, City of

Type	EIR Draft EIR
Description	The project consists of adoption of a Specific Plan to guide the reuse of Riverbank Army Ammunition Plant. This is a 143 acre site that will be used for commercial development (7.62 acres) and industrial development. A portion of the site is already developed with more than 760,000 sf of industrial buildings. The Specific Plan addresses the permitted land uses and development standards.

Lead Agency Contact

Name	Debbie Olson		
Agency	City of Riverbank		
Phone	209/863-8352	*Fax*	
email			
Address	5300 Claus Road, Suite 1		
City	Modesto	*State* CA	*Zip* 95357

Project Location

County	Stanislaus		
City			
Region			
Lat / Long	37° 42' 53" N / 120° 55' 18" W		
Cross Streets	Claus Road and Claribel Road		
Parcel No.			
Township	*Range*	*Section*	*Base*

Proximity to:

Highways	Hwy 108
Airports	No
Railways	BNSF
Waterways	Stanislaus River
Schools	Riverbank HS
Land Use	Industrial

Project Issues	Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Water Supply; Growth Inducing; Landuse; Cumulative Effects; Other Issues; Aesthetic/Visual
Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Central Valley Flood Protection Board; Department of Water Resources; Office of Emergency Management Agency, California; California Highway Patrol; Caltrans, District 10; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Toxic Substances Control; Native American Heritage Commission; Public Utilities Commission; State Lands Commission

Date Received	03/27/2013	*Start of Review*	03/27/2013	*End of Review*	05/10/2013

COMMENT LETTER # RA1

MID Modesto Irrigation District
Water and Power

1231 Eleventh St.
P.O. Box 4060
Modesto, CA 95352
(209) 526-7373

May 2, 2013

City Of Riverbank Community Development Department
Attention: Pam Carder, Project Management Specialist
5300 Claus Rd Ste 1
Modesto, CA 95357-1665

RECEIVED MAY 0 6 2013

RE: EIR Riverbank for Army Ammunition Plant
Location: Riverbank (143 Acres)

Dear Ms. Carder:

Thank you for allowing the District to comment on this referral. Following are the recommendations from our Electrical, Irrigation and Domestic Water Divisions: RA1-1

Irrigation RA1-2

- Section 4.17 C of the draft EIR discusses increasing storm water discharge flows into the Oakdale Irrigation District (OID) Riverbank Lateral. The Riverbank Lateral discharges into the Modesto Irrigation District (MID) Main Canal and is subject to a 1942 agreement limiting "irrigation spill, drainage pump discharges and storm and surface water discharges" to maximum total amounts. Any increased discharge from the Riverbank Army Ammunition Plant redevelopment project to OID's Riverbank Lateral would be subject to the constraints imposed in the 1942 agreement.

Domestic Water RA1-3

- No comments at this time.

Electrical RA1-4

- The Electric Division has no objections at this time.
- MID currently has an existing electric facility adjacent to the subject area. RA1-5
- If MID electric service is desired into the area, the customers should contact the District's Electric Engineering Department to determine the availability of electric service and coordinate service requirements to the proposed project. RA1-6

The Modesto Irrigation District reserves its future rights to utilize its property, including its canal and electrical easements and rights-of-way, in a manner it deems necessary for the installation and maintenance of electric, irrigation, agricultural and urban drainage, domestic water and telecommunication facilities. These needs, which have not yet been determined, may consist of poles, crossarms, wires, cables, braces, insulators, transformers, service lines, open channels, pipelines, control structures and any necessary appurtenances, as may, in District's opinion, be necessary or desirable. RA1-7

If you have any questions, please contact me at 526-7433.

Sincerely,

Celia Aceves
Risk & Property Analyst

Copy: File

COMMENT LETTER # RA2

OAKDALE IRRIGATION DISTRICT

RECEIVED MAY 10 2013

May 9, 2013

Ms. Pam Carder
Project Management Specialist
Riverbank Local Redevelopment Authority
5300 Claus Road, Suite 1
Modesto, CA 95357

Re: Riverbank Army Ammunition Plant Environmental Impact Report
State Clearinghouse #2011022015

Dear Ms. Carder:

The Oakdale Irrigation District (OID) has reviewed the Riverbank Local Redevelopment Authority (RLRA) Riverbank Army Ammunition Plant (RAAP) Environmental Impact Report (EIR) and has the following comments and recommendations regarding the RAAP Specific Plan (project or EIR). **RA2-1**

A letter was sent on March 8, 2011 in response to the February 2, 2011 Notice of Preparation of a Draft EIR in which a request was made that the Riverbank Lateral be fenced. Both the Land Use Concept (Figure 3-4) and the Roadway Plan (figure 3-5) of the EIR do not provide alternatives for the Riverbank Lateral as show on Figure 3-7, Potential OID Realignment. OID restates the request to fence the Riverbank Lateral. **RA2-2**

The project calls for the City of Riverbank to work with OID to explore relocating the Riverbank Lateral. Relocation is possible per OID Policy although no approval has occurred to date. Pre-consultation with OID is strongly recommended during the planning phase of any specific project. **RA2-3**

The OID Langstroth Drain is located on the southern edge of parcel 062-031-005. The EIR recommends that the western and southern project frontages along Claribel and Claus Road be widened to their ultimate widths with appropriate turn pockets, bicycle facilities and pedestrian amenities. Expansion of Claribel Road may require the facility be piped. If located underneath Claribel Road, it will become the maintenance responsibility of the City of Riverbank or Stanislaus County. **RA2-4**

1205 East F Street / Oakdale, CA 95361 / (209) 847-0341 / Fax (209) 847-3468
www.oakdaleirrigation.com

The EIR also discusses 2 existing outlets from the from the north storm drain reservoir that discharge into the Riverbank Lateral and a smaller pump that conveys storm water from the lift station directly to the OID Riverbank Lateral. You may wish to revise the EIR as these connections were plugged and removed on February 28, 2013 and the capability of RAAP to discharge storm water into the Riverbank Lateral no longer exists. RA2-5

Thank you for the opportunity to comment on this project. If you have any further questions or need any specific information, please don't hesitate to contact me at (209) 840-5537.

OAKDALE IRRIGATION DISTRICT

Sincerely,

John B. Davids, P.E.
District Engineer

cc: Administration Files

COMMENT LETTER # RA3

San Francisco
Water Power Sewer
Operator of the Hetch Hetchy Regional Water System

Bureau of Environmental Management
525 Golden Gate Avenue, 6th Floor
San Francisco, CA 94102
T (415) 934-5700
F (415) 934-5750

May 13, 2013

Debbie Olson, Executive Director
Riverbank Local Redevelopment Authority
5300 Claus Road
Riverbank, CA 95367

Re: SFPUC Comments on Riverbank Army Ammunition Plant Draft EIR (SCH #2011022015)

Dear Ms. Olsen:

The San Francisco Public Utilities Commission offers the following comments on the Riverbank Army Ammunition Deport Draft EIR (SCH #2011022015): RA3-1

1. The City and County of San Francisco (CCSF), San Francisco Public Utilities Commission (SFPUC) owns a 100-foot-wide right of way (ROW) for the Hetch Hetchy Aqueduct and the San Joaquin Transmission Line, which bisects the Specific Plan area. The Draft EIR acknowledges this ROW and the Specific Plan does not propose development in this area. However, Figure 3-8 in the DEIR identifies the SFPUC ROW as "Buffer/ Greenway/ Open Space". Please note that any use or development of the ROW, such as for landscaped open space, a pedestrian or bicycle trail, parking, emergency access routes or road crossings, must be reviewed and approved by the SFPUC. Further, CCSF owns the ROW in fee, and SFPUC charges fair market value for its use. In addition, SFPUC places restrictions on use of the ROW in order to protect utility infrastructure and insure that it is accessible for maintenance. SFPUC ROW use requirements are attached (Attachment 1). RA3-2
2. In addition, please note that the land use rights associated with the Army's entry road, which crosses the SFPUC ROW, should be investigated to determine whether this use is covered by an easement. If not, use of this crossing would require review by the SFPUC and, if approved, would be subject to a revocable license from the SFPUC. RA3-3

Edwin M. Lee
Mayor
Art Torres
President
Vince Courtney
Vice President
Ann Moller Caen
Commissioner
Francesca Vietor
Commissioner
Anson Moran
Commissioner
Harlan L. Kelly, Jr.
General Manager

3. In 2011 URS, a consultant to SFPUC, reviewed existing environmental documents that addressed the RAAP Superfund site to evaluate any potential impacts to SFPUC's right of way property from activities at the RAAP. As detailed in the attached letter report, "Request for Additional Characterization of the San Francisco Hetch Hetchy Water and Power Division Property Associated with the Riverbank Army Ammunition Plant Superfund Site", which we submit as an element of this comment (Attachment 2), soils in the SFPUC right of way may be contaminated due to the presence of a Transite (asbestos cement) pipe, a past leak in the Transite waste sewer line, leaks in a stormwater line, and overflows from stormwater retention ponds adjacent to the right of way. Additional sampling of soils in the right of way was recommended, and it also was recommended that the Transite pipeline be removed rather than abandoned in place. SFPUC is not aware if these actions were ever carried out. If contaminated soils or other hazardous materials are present, this could pose risks to utility workers in the right of way.

RA3-4

Thank you for providing SFPUC with the opportunity to comment.

Sincerely,

Irina Torrey, AICP
Bureau Manager, Bureau of Environmental Management

Attachments:

1) SFPUC Pipeline Right of Way Requirements
2) *Request for Additional Characterization of the San Francisco Hetch Hetchy Water and Power Division Property Associated with the Riverbank Army Ammunition Plant Superfund Site*. Prepared by URS Corporation for SFPUC. October 5, 2011.

cc. Rosanna Russell, Real Estate, SFPUC
Tim Ramirez, Natural Resources Land Management Division, SFPUC
Sarah Jones, CCSF Planning Dept., Environmental Planning Division

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

San Francisco Public Utilities Commission
Pipeline Right of Way Requirements

RA3-5

- *Utilities*
  - No utility may be installed along, rather than across, the Right of Way. Only perpendicular crossings are permitted.
  - No aerial utility crossing over the Right of Way is permitted except in city streets.

RA3-6

- *Land Use, Structures, and Accessibility*
  - *Structures on the Right of Way are strictly prohibited.* No one shall construct or place any temporary or permanent structure or improvement in, on, under or about the Right of Way. For the SFPUC's purposes, asphalt, concrete and cementitious concrete driveways, sidewalks and parking areas, and fences are deemed "improvements," and are subject to SFPUC review and approval.
  - No use is permitted that would restrict access to Right of Way at any time by SFPUC staff, construction equipment or vehicles. This means that structures on adjacent property must be setback at least 10 feet from the Right of Way.
  - An adjacent property owner or tenant may not use the Right of Way fulfill its open space, setback, emergency access or other development requirements.
  - Any use where the Right of Way would provide an adjacent owner, tenant or licensee with its sole emergency access to the tenant or licensee's property is prohibited.
  - No use that would cause ponding on the Right of Way is permitted.
  - Any use that cannot effectively be displaced in a timely manner upon the SFPUC's request is disfavored.
  - Any use that may contaminate with hazardous materials the soils, water or natural habitat of SFPUC property is prohibited.

RA3-7

Edwin M. Lee
Mayor

Art Torres
President

Vince Courtney
Vice President

Ann Moller Caen
Commissioner

Francesca Vietor
Commissioner

Anson Moran
Commissioner

Harlan L. Kelly, Jr.
General Manager

- Any use that would increase the SFPUC's potential liability or diminish its security is disfavored.
- Any use inconsistent with any existing or future policies adopted by the SFPUC, as they may be amended or modified from time to time, is disfavored.

RA3-7 cont.

- *Restoration*

  The SFPUC is not responsible for restoring or replacing any vegetation or improvement on the Right of Way damaged or demolished so that the SFPUC may access, maintain or repair its pipelines. The SFPUC will restore the ground with soil compacted to SFPUC standards. The vegetation or improvement owner is responsible any additional work or the restoration.

RA3-8

- *Vegetation*

  No trees or large shrubs may be planted within the Right of Way. Other vegetation may only be installed with the SFPUC's prior written consent. For a list of plants that may be permitted in the Right of Way, please refer to SFPUC Integrated Vegetation Management Policy Section 13.005 at http://www.sfwater.org/index.aspx?page=431. The tenant or licensee is responsible for vegetation maintenance and removal.

RA3-9

- *Right of Way Loading Restrictions*

  The maximum loading on the Right of Way should not exceed traffic loading HS-20 on the paved surfaces when the pipeline has a minimum four-foot cover. Overburdened or additional live or dead loads such as load-bearing footings, pole foundations, or large boulders within the influence line of the pipe trench is prohibited.

RA3-10

- *Right of Way Cover Requirements*

  To prevent damage to the PUC's underground pipelines, an adjacent owner or tenant's use of vehicles and equipment within twenty feet (20') of each side of the centerline of the PUC's pipelines (measured on the surface) are subject to the restrictions stated in Exhibit B.

RA3-11

URS

October 5, 2011

Mr. Lewis Mitani
Site Manager
Superfund Division
United States Environmental Protection Agency
75 Hawthorne Street
Mail Code SFD-8-3
San Francisco, California 94105

Subject: **Request for Additional Characterization of the San Francisco Hetch Hetchy Water and Power Division Property Associated with the Riverbank Army Ammunition Plant Superfund Site**

Dear Mr. Mitani:

URS was tasked with reviewing existing environmental documents to assess potential impacts to the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water and Power Division (HHWP) property, located on the Riverbank Army Ammunition Plant (RBAAP) Superfund Site. The HHWP utility currently bisects the northern portion the RBAAP site. In 1952, the City and County of San Francisco issued a permit to the U.S. Army to occupy and use the HHWP property crossing the RBAAP property. RA3-12

To evaluate any potential impacts to the HHWP property from activities at the RBAAP site, URS reviewed the following documents provided by the SFPUC:

- Site Investigation Report Riverbank Army Ammunition Plant Riverbank, California, March 2008 (CH2MHill, 2008);
- Environmental Condition of Property Phase I Report Riverbank Army Ammunition Plant, Riverbank, California, November 17, 2006 (CH2MHILL, 2006); and
- Second Five Year Review Report Final Riverbank Army Ammunition Plant, City of Riverbank Stanislaus County California, September 2006 (U.S. Army, 2006).

RA3-13

Based on a review of these documents, three areas of concern were identified associated with the HHWP property where it bisects the RBAAP property:

URS Corporation
Post Montgomery Center
One Montgomery Street, Suite 900
San Francisco, CA 94104-4538
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

1. Site RBAAP-04/SWMU-12: A process waste sewer line made of Transite (asbestos cement) material crosses the HHWP property. Historically, there was a break in this line that released untreated process wastewater onto the HHWP property. Additionally, the Transite pipe material itself is hazardous if disturbed.

2. Site RBAAP-09/SWMU 20: A stormwater line servicing the RBAAP stormwater system crosses HHWP property to connect to the stormwater retention ponds. Leaks in the stormwater line where it crosses HHWP property may have resulted in contamination of soil on HHWP property.

3. Site RBAAP-09/SWMU 20: The stormwater retention ponds located directly adjacent to the HHWP property have historically overflowed. These overflows may have resulted in contamination of soil on the HHWP property.

RA3-13 cont.

Site RBAAP-04: Process Waste Sewer Line

In 1972, a break occurred in the effluent sewer line that transported wastewater from the wastewater treatment plant to the facility evaporation percolation ponds, located off site adjacent to the Stanislaus River. The break was at the intersection of the HHWP property. According to available information, this break was not discovered for 7 days, and an estimated 1 million gallons per day of wastewater were being discharged through the pipe at this time. An unknown volume of wastewater was released, sufficient to cause pooling at the ground surface (CH2MHILL 2006). Additionally, SFPUC understands that the sewer line was video surveyed, and that additional breaks in the line were observed as reported in the Nor Cal Pipeline Services Sewer Report, Project Name: Riverbank Army Ammunition Plant October 2009 (Nor Cal, 2009).

According to the 2006 Phase I Report, an investigation was completed in the vicinity of the pipe leak during the Confirmatory Phase of the Contamination Survey. This investigation included collection of four soil sample cores in the vicinity of the pipe break, and one background sample. Samples were only analyzed for California Title 22 Metals, and results indicated only chromium, copper, and fluoride were present at concentrations close to or greater than three times background (CH2MHILL 2006). Therefore, the Feasibility Study recommended no further action in this area.

RA3-14

Because multiple contaminants of concern (COCs) associated with the RBAAP facility could have been present in the water in the effluent sewer line, it would be appropriate to collect samples for analysis beyond Title 22 Metals. Other contaminants associated with the site include: hexavalent chromium, volatile organic compounds (VOCs), total petroleum

hydrocarbons (TPH), cyanide, and polychlorinated biphenyls (PCBs). VOCs would be less likely to persist in shallow soils, because the spill occurred in the 1970s. However, PCBs, TPH, hexavalent chromium, and cyanide could have been present in wastewater, and would be reasonably expected to be present in shallow soil in the vicinity of the break. Some of these COCs were sampled during the Remedial Investigation (RI) at other sewer-related sites at the RBAAP, but not at the sewer line break location.

URS recommends that additional samples be collected at the location of any breaks in the line, and sampled for these COCs. A review of the line video survey should be conducted to identify any breaks on or near the HHWP property. If new breaks on or adjacent to the HHWP property are observed in the video surveys, then additional sampling should be conducted in these areas as well. Additionally, because the Transite pipe represents a hazard to future water utility workers if left in place, the pipe should be removed when it is no longer in use, rather than abandoned in place.

RA3-14 cont.

Site RBAAP-09/SWMU 20: Storm Discharge Lines

Although no specific release from a break in the stormwater discharge lines has been documented in the reports reviewed, the discharge line crosses the HHWP to connect to the stormwater retention ponds. Based on the Nor Cal Pipeline Services Sewer Report, SFPUC understands that this line was video surveyed and that breaks may have been observed (Nor Cal, 2009). A review of the line video survey should be conducted to identify any breaks on the HHWP property. If any breaks in this line are present on or adjacent to the HHWP property, soil samples should be collected at and below the depth of the line and analyzed for Title 22 Metals, PCBs, TPH, hexavalent chromium, and cyanide. These contaminants are all COCs at the site, and could be present in any stormwater runoff transferred through this line.

RA3-15

Site RBAAP-09/SWMU 20: Stormwater Retention Ponds

The Northwest Storm Reservoir is located adjacent to the Hetch Hetchy aqueduct on the HHWP property. Historically, this reservoir has overflowed in heavy rains. In 1974, the Army Environmental Hygiene Agency reported a sample collected from water in the Storm Reservoir had results showing elevated concentrations of selected heavy metals (CH2MHILL 2006).

During Phase I of the RI at the site, two sediment samples were collected from the reservoir and analyzed for total and hexavalent chromium, total and free cyanide, 1,1-dichloroethylene, and the organic persistent and bioaccumulative toxic substances listed in California Title 22 California Code of Regulations. The analytical results documented total chromium at levels greater than

RA3-16

three times background. Although it was determined that the reservoir was not a significant source of groundwater contamination, the potential shallow soil contamination was not considered (CH2MHILL 2006).

Because elevated concentrations of heavy metals have been detected in both water and sediment present in the stormwater reservoir, contaminants could potentially have migrated to the HHWP soils during an overflow. Although potential soil contamination from stormwater overflow is not likely to be a source of groundwater contamination, it would result in contaminated soil on the HHWP property. Therefore, samples should be collected on the HHWP property in the vicinity of the stormwater reservoir to confirm that contamination is not present. Sample analysis should include Title 22 Metals, hexavalent chromium, PCBs, and cyanide.

RA3-16 cont.

Regulatory and Guidance Information

The RBAAP site investigation was performed under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Public Law (PL) 96-510 as amended by Superfund Amendment and Reauthorization Act (SARA) (PL 99-499) and the Community Environmental Response Facilitation Act (CERFA) PL 102-42. Title 40 environmental regulations and U.S. EPA guidance documents guided the environmental investigation, remedy selection, and Record of Decision (ROD). In addition, the 2006 Phase I ESA was a component of the Environmental Baseline Survey (EBS) performed under Department of Defense policy to support a future Finding of Suitability of Transfer (FOST). It appears that the data gaps identified in this letter are covered by the following regulations and guidance:

RA3-17

1) **CERCLA Site Investigation:** The site investigation generally followed the 1988 U.S. EPA Remedial Investigation / Feasibility Study (RI/FS) Guidance (EPA/540/G-89/004); however, it appears that the selection of COCs for sites RBAAP-04 and RBAAP-09 did not include all the known wastes stored and released in those areas as required in the guidance. The liquid wastes released in these areas should have been investigated for all applicable COCs including hexavalent chromium, VOCs, TPH, cyanide, and PCBs. The incomplete COC selection created a data gap that propagated into the risk assessment and remedy selection stages of the CERCLA process.

RA3-18

2) **Remedy Selection:** The remedy selection and ROD for this site generally followed the 1999 U.S. EPA Guide to Preparing Superfund Proposed Plans, Records Of Decision, And Other Remedy Selection Decision Documents Guidance (EPA 540-R-98-031); however, it appears that the data gap from the missing COCs for sites RBAAP-04 and RBAAP-09 carried through from the site investigation phase to the risk assessment and remedy

RA3-19

selection phase. The evaluation of the nine criteria could not take into account the potential COCs at sites RBAAP-04 and RBAAP-09 because no information was available regarding the presence of all the potential COCs. Following U.S. EPA guidance any minor changes to the remedy required by new information could be documented in the Administrative Record and/or a future ROD Amendment.

RA3-19 cont.

3) **Five-Year Review:** The 2006 Second Five Year Review Report Riverbank Army Ammunition Plant prepared by AHTNA generally followed the U.S. EPA 2001 Comprehensive Five-Year Review Guidance (EPA 540-R-01-007); however, the COC data gaps for sites RBAAP-04 and RBAAP-09 were not identified in the review. The U.S. EPA concurred with the U.S. Army that the remedy was protective of human health and the environment; however, the Five-Year Review discussed future implementation of Institutional Controls at the site and continuing RCRA closure for the Industrial Wastewater Collection System. It appears that the COC data gaps for sites RBAAP-04 and RBAAP-09, and the potential presence of utility worker risk from COCs and from the buried Transite pipe should be addressed in the Institutional Controls and RCRA closure that are currently in progress. If additional data are collected as requested in this letter the results could be appended to the Administrative Record and/or included in a future ROD amendment depending on whether the findings are significant. In addition, the management in place of the buried Transite pipe addressed through Institutional Controls or RCRA closure should be documented in the administrative record and/or in a future ROD amendment, as required.

RA3-20

4) **Property Transfer:** The potential presence of COCs that were not sampled for at the three locations identified above and the presence of the Transite pipe are covered under CERCLA 120(h) (as amended) which requires that the government certify that "all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer."

RA3-21

5) **Environmental Baseline Survey:** The general requirement in CERCLA 120(h) is defined in more detail in DOD policy, in 40 CFR 373, and in ASTM Method D6008-96(2005) "Standard Practice for Conducting Environmental Baseline Surveys." The 2006 Phase I ESA prepared by CH2M Hill generally followed ASTM D6008-96 (2005); however, although this standard explicitly calls for a detailed review of records associated with spills (Section 7.3.1) and contamination from runoff (7.3.19) the COC data gaps for sites RBAAP-04 and RBAAP-09 were not identified. Under the ASTM

RA3-22

D6008-96 (2005) standard "if current records are incomplete regarding the nature and extent of contaminant sources, the user or environmental professional will note the strategy for completing relevant records." Since the COC data gaps in RBAAP-04 and RBAAP-09 were not identified or addressed it appears that the 2006 Phase I ESA overlooked the potential COCs in these areas.

RA3-22 cont.

Recommendations

In summary, URS recommends that additional sampling be conducted in the three areas of concern described above to determine if soil on the HHWP property has been impacted. Additionally, URS recommends that the video survey of the wastewater and stormwater lines be reviewed to target sampling around any breaks on—or in the vicinity of—the HHWP property. Samples should be analyzed for COCs, including Title 22 Metals, hexavalent chromium, PCBs, and cyanide. Lastly, the disposition of the Transite wastewater line after it is no longer in use should be addressed to mitigate risks to future utility workers. The responsibility for addressing the risks from the pipe should be with the U.S. Army, rather than the HHWP.

RA3-23

Please contact me at 415-243-3783, or at giorgio.molinario@urs.com, should you have any questions or require any clarification.

RA3-24

Sincerely,

URS CORPORATION

Iain Baker, REA, CHMM
Project Manager

Giorgio Molinario, REA
Senior Environmental Chemist

cc: Peter Dean, San Francisco Public Utilities Commission

COMMENT LETTER # RA4

Stanislaus Consolidated
Fire Protection
District
3324 Topeka Street
Riverbank, CA 95367
(209)869-7470
(209)869-7475 Fax

May 17, 2013

RECEIVED MAY 20 2013

Pam Carder
Project Management Specialist
Riverbank Local Redevelopment Authority
5300 Claus Road, Suite 1
Modesto, CA 95357

Dear Ms. Carder:

Stanislaus Consolidated Fire Protection District (SCFPD) has reviewed the "Draft Environmental Impact Report (EIR) Riverbank Local Redevelopment Authority Specific Plan for Riverbank Army Ammunition Plant" and wishes to have the following comments included: RA4-1

1. The formation of Community Services Districts and an improvement to SCFPD Development Fees needed to fund the anticipated staffing and capital assets is referenced in the Draft EIR but should be included as a mitigation measure with identifiable benchmarks. RA4-2
2. For ALL mitigation measures, benchmarks shall be identified prior to the adoption of the EIR, which will trigger the implementation of said measures. RA4-3

If you have any questions, please feel free to contact me at (209) 869-7470.

Sincerely,

S. Koelmans
Shirley Koelmans
Fire Inspector

Brian M. Kelly
Brian M. Kelly
Fire Chief, Interim

COMMENT LETTER # RA5

CHIEF EXECUTIVE OFFICE

Monica Nino
Chief Executive Officer

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

Stan Risen
Assistant Executive Officer

Keith D. Boggs
Assistant Executive Officer

1010 10th Street, Suite 6800, Modesto, CA 95354
Post Office Box 3404, Modesto, CA 95353-3404

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

May 20, 2013

Pam Carder
Riverbank Local Redevelopment Authority
5300 Claus Road, Suite 1
Modesto, CA 95357

SUBJECT: ENVIRONMENTAL REFERRAL – RIVERBANK LOCAL REDEVELOPMENT AUTHORITY – SPECIFIC PLAN FOR RIVERBANK ARMY AMMUNITION PLANT

Ms. Carder:

The Stanislaus County Environmental Review Committee (ERC) has reviewed the subject project and has determined that it may have a significant effect on the environment. **RA5-1**

The following comments/conditions are submitted by the Department of Public Works, Senior Land Development Coordinator:

- The County's Public Works Transit Division currently operates transit service in the City of Riverbank and plans to implement Dial-A-Ride (DAR) service in the City of Riverbank beginning August 5, 2013. As a result of the service improvements planned for 2013, the service boundary for the DAR service in the City has been extended from Claus Road to Eleanor Avenue and to Montgomery Rd. The Transit Division is recommending that any future and potential transit stops to be located along both Claus and Claribel Roads should be coordinated with the Transit Division to ensure it may provide input on the location of these amenities. **RA5-2**

- Mitigation measures state that each development shall pay its fair share for both the Claribel at Coffee and Claribel at Roselle intersections for left turn pockets. Developments may require direct mitigation prior to any future widening project, therefore, each development shall be responsible for direct mitigation including, but not limited to, the construction of right turn lanes, additional through lanes, and increased corner radiuses for larger vehicles. **RA5-3**

These mitigations and fair share contributions should not be limited to the intersections of Claribel at Coffee and Claribel at Roselle intersections. **RA5-3 cont.**

- The EIR should not consider the North County Corridor in its baseline condition as a route has not yet been adopted. Upon adoption, the Specific Plan should be revised with the updated traffic model. **RA5-4**

- Road widening of Claribel Road and Claus Road are mentioned in the summary but not considered in the mitigation measures. Please include this as part of the mitigation measures. **RA5-5**

- Measure Trans-3 states "Future developers within the RAAP area shall contribute their fair share towards improvements at the intersections identified above." Table 4.16-9 shows Claribel at Coffee and Claribel at Roselle intersections while the intent of Trans-3 is for the intersections of Atchison Street (State Route 108) at 1st Street, State Route 108 at Claus Road and State Route 108 at Patterson Road. This should be clearly identified in the mitigation measures. **RA5-6**

- In addition, Measure TRANS-5 and Measure TRANS-1 are conflicting measures for the intersection at Claribel and Coffee. Please provide clarifying information to Angie Halverson, Senior Land Development Coordinator with the Department of Public Works. **RA5-7**

The ERC appreciates the opportunity to comment on this project.

Sincerely,

Mark E. Loeser

Mark E. Loeser
Management Consultant
Environmental Review Committee

MEL:ss

cc: ERC Members

COMMENT LETTER # RA6

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

May 20, 2013

Pam Carder, Project Management Specialist
Riverbank Local Redevelopment Authority
5300 Claus Road, Suite 1
Modesto, CA 95357

Project: Specific Plan for Riverbank Army Ammunition Plant

District Reference No: 20130321

Dear Ms. Carder:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Specific Plan and Draft Environmental Impact Report (EIR) for the Riverbank Army Ammunition Plant (RAAP) project. The project includes the development of a 146-acre project site with up to 119,058 sf new commercial/retail space, 1,411,542 sf of industrial space (673,625 sf existing, 737,917 sf new), and 116,637 sf of new office/research and development space. **RA6-1**

As discussed in the EIR, the Specific Plan is a program level project and should include a discussion of policies, which when implemented, will reduce or mitigate impacts on air quality at the individual project level. To aid the City of Riverbank in addressing project specific issues at the program level and review the feasibility of all potential mitigation measures, the District offers the following comments and recommendations.

Criteria Pollutant Emissions

1. Mitigation Measures AQ-1a and AQ-2 have been incorporated into the project to reduce potential impacts from construction and operational activities associated with the buildout of the Specific Plan. The discussions in the EIR and the mitigation measures indicate that all future projects within the RAAP will require additional emissions analysis and will be mitigated in accordance with District Rule 9510 (Indirect Source Review). However, the mitigation measures as written are unclear as to whether they are meant to: (1) ensure that future development project will be compliant with CEQA requirements, (2) ensure that all future development projects would comply with District Rule 9510 (Indirect Source Review) requirements, or (3) **RA6-2**

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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ensure compliance with both CEQA and District Rule 9510. The District recommends that discussions in the EIR and Mitigation Measure AQ-1a and AQ-2 be amended, or new measures added, to clarify the intent of each measure and to identify how the measures will be made enforceable by the City of Riverbank. The District offers the following recommendations: **RA6-2 cont.**

1a) *If the intent of the mitigation measure is to ensure compliance with CEQA requirements:* Table 5-1 of the Specific Plan identifies allowed uses within the various development districts within the RAAP plan area. Some of these uses appear to be allowed by right (ministerial approvals only), while others would require additional conditions or the issuance of a use permit (discretionary approvals). As CCR§ 15268 exempts ministerial projects from CEQA requirements, it is unclear whether the City will require additional analysis of construction and operational emissions for all projects within the RAAP plan area, or whether these requirement will be only for projects requiring additional conditions or use permits. It is also unclear whether the City will require project-level developments to mitigate impacts on air quality to less than significant. The District recommends that the discussions on construction and operational related impacts and Mitigation Measure AQ-1a and AQ-2 be amended to clarify: which projects, if any, would be considered ministerial approvals and which would require additional review; whether projects must mitigate to less-than-significant; and the actions the City will take to enforce the required mitigation. **RA6-3**

1b) *If the intent of the mitigation measure is to ensure compliance with District Rule 9510:* As previously discussed, Table 5-1 identifies allowed uses within the various development districts within the RAAP plan area, some of which appear to be allowed uses by right with no further CEQA analysis required. As such, approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank for some uses identified in Table 5-1. The District recommends that the mitigation measures be amended to include a requirement for all applicants within the RAAP plan area, including those projects allowed by right, to demonstrate to the City compliance with Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. **RA6-4**

1c) *If the intent of the mitigation measures are to ensure compliance with both CEQA and District Rule 9510 requirements:* The District recommends that the measures be amended to include all District recommendations discussed above. **RA6-5**

2. For project emissions that would be significant and unavoidable, the District recommends the environmental document be revised to include a discussion of the feasibility of implementing a voluntary emission reduction agreement (VERA) to mitigate project specific impacts to less than significant levels. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of **RA6-6**

administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's Emission Reduction Incentive Program (ERIP). The funds are disbursed by ERIP in the form of grants for projects that achieve emission reductions. Thus, project specific impacts on air quality can be fully mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

The District has been developing and implementing VERA contracts with project developers to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, and effectively achieves the emission reductions required by a lead agency, by mitigating project related impacts on air quality to a net zero level by supplying real and contemporaneous emissions reductions. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document be amended to include an assessment of the feasibility of implementing a VERA.

Additional information on implementing a VERA can be obtained by contacting District CEQA staff at (559) 230-6000.

RA6-6 cont.

Health Risks

3. The DEIR includes a health risk assessment (HRA); however, it does not include an ambient air quality analysis (AAQA). The District offers the following comments and recommendations regarding the health risk discussion and analysis presented in the EIR:

RA6-7

3a) The discussion on exposure of sensitive receptors to substantial pollutant concentrations did not provide adequate information regarding the details of the HRA, nor were the details provided in the appendices to the EIR. Furthermore, the actual modeling files were not submitted to the District for review. As such, the District cannot make a determination as to the level of compliance with District policies and methodologies for performing HRA analyses.

RA6-8

3b) The only emissions modeled in the HRA were diesel particulate emission (DPM) increases on Claus Road. The District's methodology for completing an HRA for development projects is to predict risk only for emissions of toxics within the boundaries of the project site excluding emissions from public highways. Because Claus Road is a public highway outside of the project area boundaries, any increase in DPM from traffic generated by the Specific Plan would not be considered as producing a risk associated with the project.

RA6-9

3c) Buildout of the Specific Plan will result in emissions generated by diesel truck traffic from retail and industrial land uses, stationary sources used in

RA6-10

manufacturing, and from commercial uses such as restaurants, fuel dispensing operations, and dry cleaning. (It should be noted that most future dry cleaning operations will not emit perchloroethylene; however, some perchloroethylene replacements may be or may contain toxic air contaminants.) Stationary source emissions from individual developments within the Northern and Southern Caps may be subject to District permitting regulations, in which case the District would perform a Risk Management Review (RMR) and AAQA as appropriate. However, please note that the District's analyses include only those emissions that the District has statutory authority and will not include emissions generated by mobile sources. As such, more detailed analyses is needed to comply with CEQA requirements. **RA6-10 cont.**

3d) An AAQA should be performed to ensure that Federal and State ambient air quality standards for all criteria pollutants, including nitrogen dioxide, will not be violated. Concentration predictions need to be made for receptors surrounding the project that are in ambient air and not just residential or worker sites. **RA6-11**

3e) The HRA presented in the EIR is not adequate to make a determination of the significance of potential health impacts resulting from implementation of the Specific Plan and should not be considered to be a programmatic HRA. The District recommends that a program level HRA and AAQA be prepared. The District strongly recommends that the City or its consultants contact the District for more information regarding the appropriate modeling approach. More information on HRAs can be obtained by: **RA6-12**

- Contacting District Technical Services staff by phone at 9559) 230-6000;
- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

3f) Accurate quantification of health risks and operational emissions requires detailed site specific information, e.g. type of emission source, proximity of the source to sensitive receptors, and trip generation information. The required level of detail is typically not available until project specific approvals are being granted. As discussed above, it appears that allowed uses that do not require additional conditions or use permits may be exempt from additional CEQA analysis. However, some of these allowed uses may lead to increased health risks resulting from increases in diesel particulate matter and other emissions from mobile and stationary sources. Therefore, the District recommends the inclusion of a mitigation measure requiring a separate HRA and AAQA be completed for each new development project within the RAAP area, including those that would otherwise appear to be exempt from CEQA (such as those uses allowed by right as). These future analyses should include all mobile and stationary source emissions from each development. As new projects are constructed, the District recommends a cumulative analysis should be prepared to determine the total risk from the sources within the Specific Plan. **RA6-13**

District Rules and Regulations

4. As discussed in the EIR, individual development projects within the scope of the RAAP Specific Plan would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out of new developments, or the expansion of any existing building, the project would include or exceed any one of the following:

   - 50 dwelling units
   - 2,000 square feet of commercial space;
   - 25,000 square feet of light industrial space;
   - 100,000 square feet of heavy industrial space;
   - 20,000 square feet of medical office space;
   - 39,000 square feet of general office space; or
   - 9,000 square feet of educational space; or
   - 10,000 square feet of government space; or
   - 20,000 square feet of recreational space; or
   - 9,000 square feet of space not identified above; or

   It is important to note that all projects within the scope of the EIR exceeding the thresholds identified above will be subject to Rule 9510. As previously discussed, the adoption of the Specific Plan may constitute the final discretionary approval by the City for those allowed uses identified in Table 5-1. As such, the District strongly recommends the City contact the District's ISR staff to discuss the application process and how to adequately complete an Air Impact Assessment (AIA) Application. District ISR staff is available to meet with the City and/or its consultants to further discuss the requirements of Rule 9510. More information on District Rule 9510 can be obtained by:

   - Calling the District's ISR staff at (559) 230-6000;
   - E-mailing inquiries to: ISR@valleyair.org; or
   - Visiting the District's website at: http://www.valleyair.org/ISR/ISRHome.htm.

RA6-14

5. Individual development projects within the scope of the RAAP Specific Plan may also be subject to the following District rules and regulations: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 4002 (National Emission Standards for Hazardous Air Pollutants), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

   The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to individual projects or to obtain information about District permit requirements, project proponents are strongly encouraged to contact the District's Small Business Assistance Office at (209) 557-6446 prior to the start of

RA6-15

construction activities. A complete list of current District rules can be found on the District's website at: www.valleyair.org/rules/1ruleslist.htm. **RA6-15 cont.**

General Comments

6. The District recommends the discussions regarding the State and Federal Ambient Air Quality Standards (AAQS) and the District's current attainment plans be updated to reflect the most current information as follows: **RA6-16**

   6a) The 2013 Federal Ambient Air Quality Standard for fine particulate matter (PM2.5) has been reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$. The District recommends that Table 4.3-2 on page 4.3-15 in the EIR be amended to reflect the current PM2.5 AAQS. Current attainment status and AAQS can be found on the District's website at: http://www.valleyair.org/aqinfo/attainment.htm. **RA6-17**

   6b) The District approved the 2012 PM2.5 Plan on December 20, 2012. The plan was then approved by the California Air Resources Board (ARB) on January 24, 2013. This plan assures the San Joaquin Valley Air Basin will comply with the Environmental Protection Agency (EPA) 2006 PM2.5 standard by the 2019 deadline. The District recommends that the discussion on page 4.3-21 in the EIR be amended to reflect the current status of the District's PM2.5 attainment plan. A copy of the District's 2012 PM2.5 Plan can be found on the District's website at: http://www.valleyair.org/Air_Quality_Plans/PM25Plans2012.htm. **RA6-18**

7. Referral documents for future development projects with the scope of the RAAP Specific Plan should include a project summary detailing, at a minimum, the land use designation, project size, and proximity to sensitive receptors and existing emission sources, and should identify the project as being with the scope of the RAAP Specific Plan. **RA6-19**

The District recommends that a copy of the District's comments be provided to the project proponent. If you have any questions or require further information, please call Jessica Willis at (559) 230-5818. **RA6-20**

Sincerely,

Dave Warner
Director of Permit Services

Arnaud Marjollet
Permit Services Manager

DW:jw

COMMENT LETTER # LA1

City of Modesto
Community and Economic
Development Department/Planning Division
1010 Tenth Street, Third Floor
Modesto, CA 95354

May 17, 2013

Pam Carder, Project Management Specialist
Riverbank Local Redevelopment Authority
5300 Claus Road, Suite 1
Modesto, CA 95357

RE: Riverbank Army Ammunition Plant Specific Plan & EIR (PRR-11-001)

Dear Ms. Carder:

Thank you for providing the City of Modesto the opportunity to review the Army Ammunition Plant Specific Plan and Draft EIR. The City of Modesto offers the following comments: LA1-1

1. The intersections of Claus / Sylvan and Claus / Plainview should be added to the set of traffic study intersections. Significant project-related traffic volumes can be expected to occur south of the project, along Claus Road; and, LA1-2

2. The trip distribution of 13% of AM trips from the east on Claribel seems high, relative to the 19% of AM trips from the south on Claus. This data should be confirmed. LA1-3

We look forward to opportunities to review additional project-related documentation as it becomes available. Should you have any questions, feel free to call me at (209) 577-5267.

Regards,

Brad Wall, AICP
Principal Planner

P.O. Box 642, Modesto, CA 95353 *www.modestogov.com* *Phone: (209) 577-5267 • Fax: (209) 491-5798*

RIVERBANK LOCAL REDEVELOPMENT AUTHORITY

RIVERBANK ARMY AMMUNITION PLANT SPECIFIC PLAN



NOVEMBER 2013 | REVISED PUBLIC REVIEW

RIVERBANK LOCAL REDEVELOPMENT AUTHORITY

RIVERBANK ARMY AMMUNITION PLANT SPECIFIC PLAN

NOVEMBER 2013 | REVISED PUBLIC REVIEW

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RIVERBANK ARMY AMMUNITION PLANT SPECIFIC PLAN

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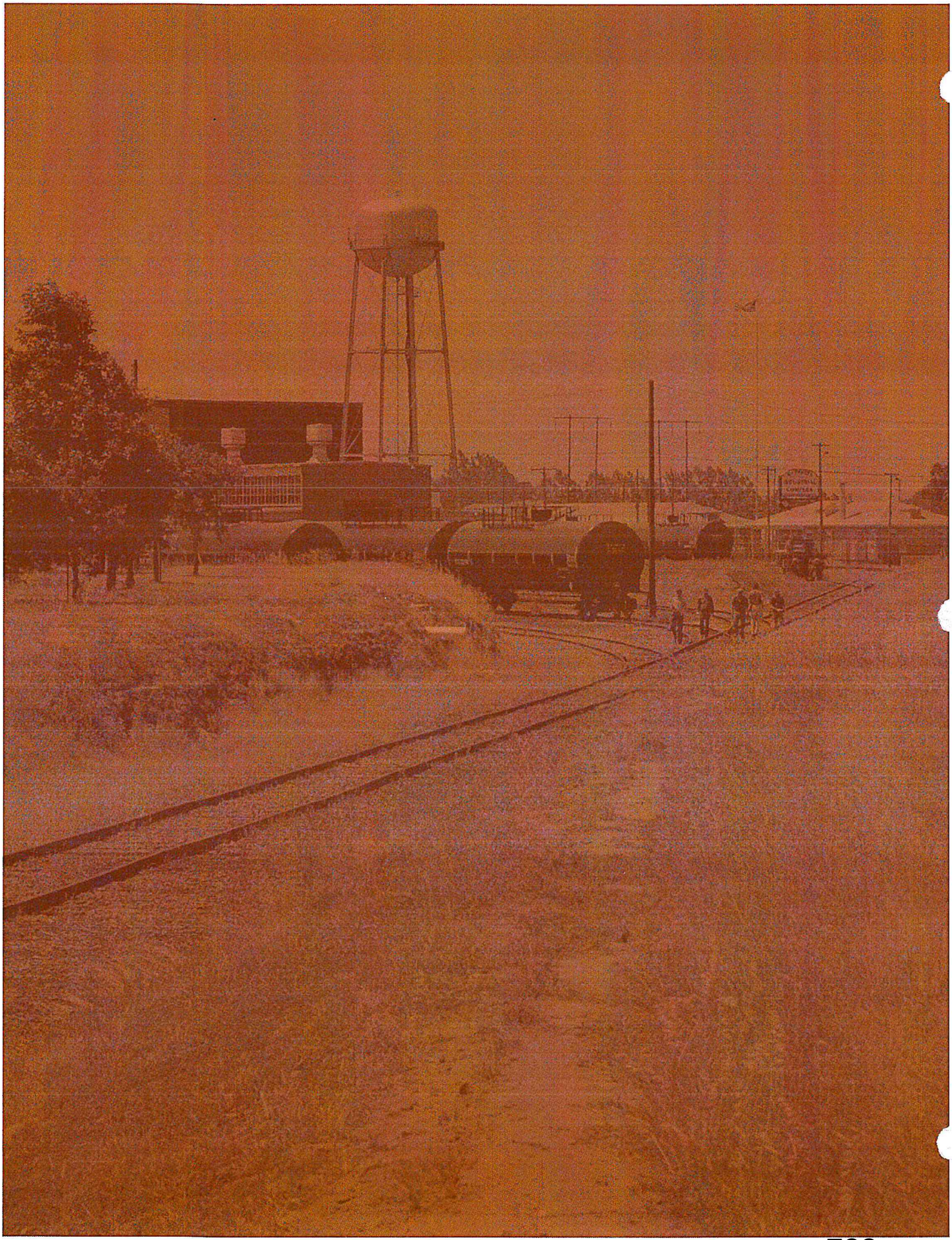
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CHAPTER 1:

INTRODUCTION

The Riverbank Army Ammunition Plant (RAAP) has been a primary employment center in Riverbank for more than six decades. From 1952 to 2009, the U.S. Army used the site to manufacture shell casings, mortar grenades and other ammunition components. However, the RAAP was selected for closure as part of the Base Closure and Realignment (BRAC) 2005 round, and the Army decided to move Riverbank's munitions production facilities to Rock Island, Illinois. Because the RAAP provided local residents with relatively high-paying jobs, the RAAP's closure has the potential to create a strong negative impact on the economic well-being of Riverbank. It is for this reason that the City of Riverbank has prioritized the redevelopment of this property for civilian use and envisions this property as a continued economic engine for the City.

To ensure that the RAAP property will continue to thrive under civilian ownership, the Riverbank Local Redevelopment Authority (LRA) has prepared this Specific Plan to develop a clear framework for future development on the site, both in existing industrial areas and currently undeveloped areas. The City also wants to ensure through this Specific Plan process that new development at the site is in keeping with the character of Riverbank and that development occurs in a sustainable manner. Through this process and the development framework of this Specific Plan, it is envisioned that the RAAP will not only return to its previous role as a source of jobs for the city, but that it will become redefined as a green industrial park that can serve as a model for sustainability for the entire region.

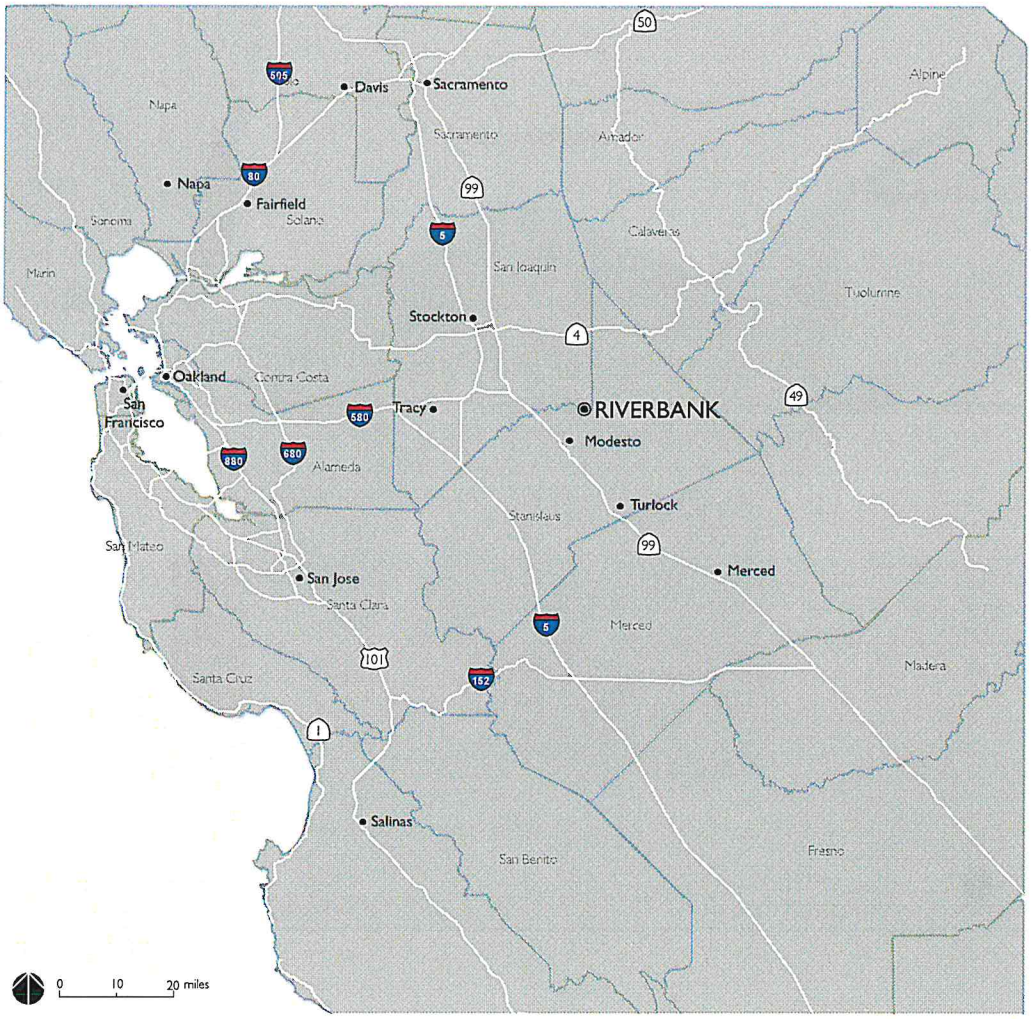


A. Regional and Local Setting

The City of Riverbank is located in the heart of California's Central Valley in Stanislaus County. The City is located 5 miles northeast of the City of Modesto, 90 miles east of Oakland and 70 miles southeast of Sacramento. Figure 1-1 shows Riverbank's location within the region.

The RAAP is composed of two non-contiguous sites, as shown in Figure 1-2. The Main Site, and focus of this Specific Plan, is located in the most southeastern portion of Riverbank's city limits. The Evaporation/Percolation Ponds (E/P Ponds) are located just north of the city limits, between State Highway 108 and the Stanislaus River. The E/P Ponds are undeveloped open space used for evaporation and percolation of wastewater from groundwater treatment. These 29 acres will be retained by the Army and are not included in this Specific Plan.

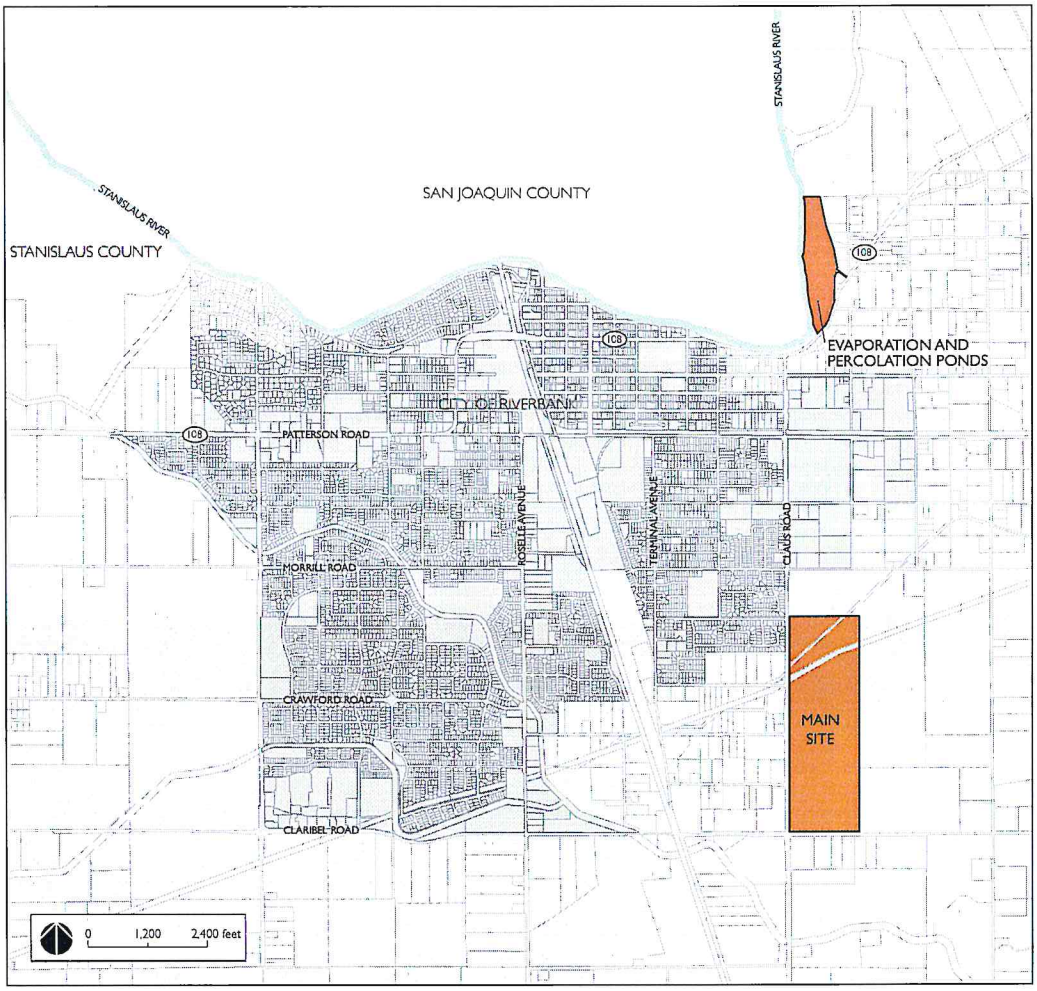
Figure 1-1 Regional Map



B. Specific Plan Area

The Specific Plan Area only applies to the Main Site. The Main Site is located at the corner of Claus Road and Claribel Road, as shown in Figure 1-3, and is approximately 146 acres in area. The RAAP site contains approximately 150 existing structures, most of which were used for ammunition manufacturing; some are now occupied by private tenants. In addition to these areas, there is a significant amount of vacant land at the northern and southern areas of the Main Site, along Claus and Claribel Roads, are also included in the Specific Plan Area.

Figure 1-2 RAAP Subareas



C. Purpose and Intent of Specific Plan

This Specific Plan is intended to serve as the primary document and reference guide for the future development and redevelopment of the RAAP site. This Specific Plan provides the community and decision-makers with clear documentation of the vision for the RAAP. Furthermore, it is intended to provide a clear policy and regulatory framework by which future development projects and public improvements will be reviewed. To augment these provisions of the Plan, guidance on design, potential public investments, and implementation is provided.

D. Planning Process

This section describes the planning process that led to the development of this Specific Plan.

1. BRAC Process

The Base Closure and Realignment (BRAC) Commission, convened by the U.S. Congress in 2005, made recommendations for closing a number of United States military bases, including the RAAP. The BRAC process was created as a mechanism to plan for and ultimately transition the property from federal ownership to ownership by public or private entities.

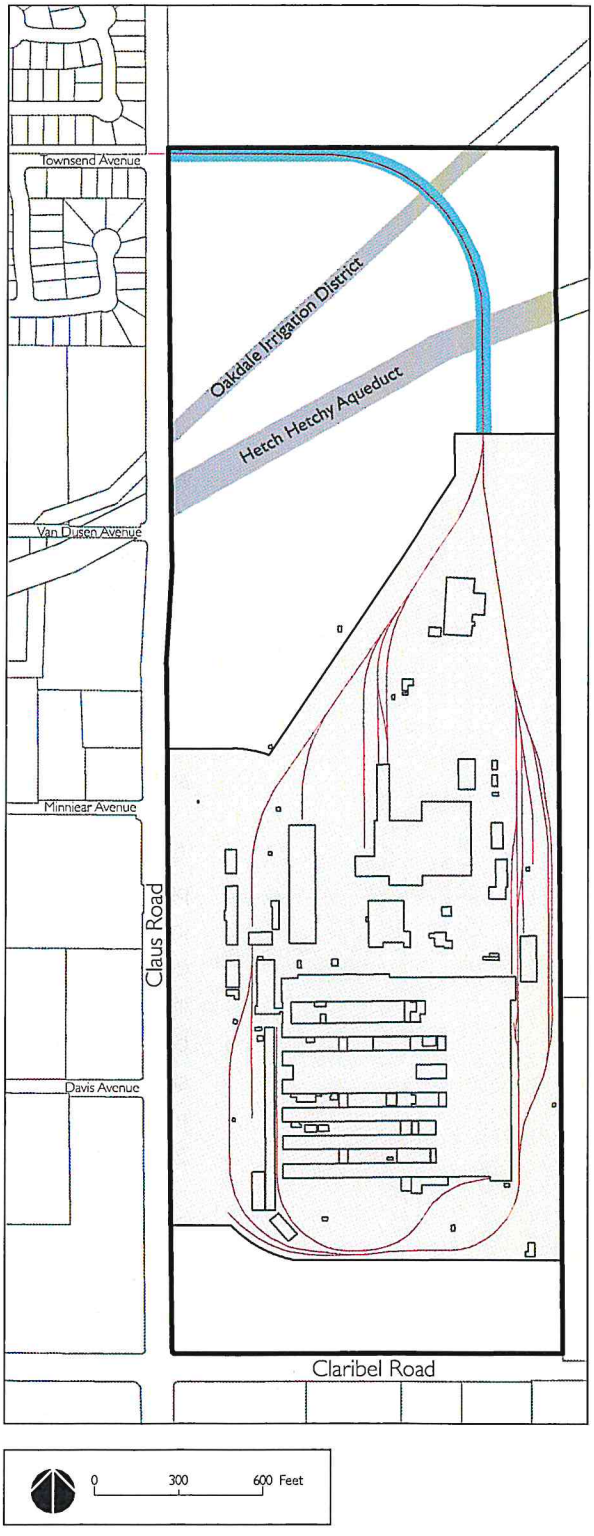
As part of the base closure process, the City of Riverbank was required to complete a Base Reuse Plan, with a community process to develop a strategy for returning the RAAP to civilian use.

2. Base Reuse Plan Process and Preparation

The LRA prepared a Base Reuse Plan prior to undertaking the process for this Specific Plan. The approved Base Reuse Plan contains a detailed recommendation for conveyance of the RAAP property, as well as a conceptual land use plan for its future use. The Base Reuse Plan established a goal for the types of future businesses desired and a broad plan for undeveloped areas of the site. The Base Reuse Plan served as a starting point for the development of this Specific Plan.

Work on the Base Reuse Plan began in March 2007, with initial kick-off meetings between LRA staff, its consultants, and representatives of the Army. These meetings were followed by tours of the facility and initial planning for community and stakeholder events.

Figure 1-3 Main Site Location



The first stakeholder meeting was held on May 9, 2007. Representatives from each of the then-current RAAP tenant businesses were invited to attend the stakeholder meeting, along with representatives from the Army, the City of Riverbank, and the City's consulting team. The purpose of the first stakeholder meeting was to explain the BRAC process, identify the opportunities and constraints faced at the site, address any tenant concerns, and solicit feedback on tenants' desires for the future of the RAAP site. A second stakeholder meeting was held on July 11, 2007. This meeting focused more on detailed issues such as the groundwater contamination on the site, the timeline for remediation of the site, future land uses, and infrastructure.

A community workshop was held on June 7, 2007, between the first and second stakeholder meetings. The public was asked to provide their vision for the future of the site. The workshop was useful in solidifying the community's vision and generated goals that were appropriate for the site.

On February 25, 2008, an open house was held to review the preliminary alternative plans proposed for the reuse of the RAAP site. The open house was informal and allowed members of the public to view the alternatives and ask questions before the LRA chose a preliminary preferred alternative. Existing business tenants at RAAP were also invited to view and discuss the alternatives. Later that evening, the LRA held a formal public hearing to receive direction from the public on the preliminary preferred alternatives presented and select the community's preference.

The Draft Base Reuse Plan was posted on the City's website on September 15, 2008. A public presentation of the Draft Reuse Plan was held on September 18, 2008, and also included public tours of the installation. The presentation on the Draft Reuse Plan was enthusiastically received by the approximately 100 individuals in attendance. Attendees included residents, LRA officials, Stanislaus County officials, Congressional staff, current business tenants, prospective businesses and employees, real estate officials, and consultants. Subsequent public meetings and hearings provided substantial opportunity to receive feedback regarding the Reuse Plan. Public meetings were held on September 22, 2008, and October 27, 2008, with a final public hearing on October 30, 2008.

3. Specific Plan Process

This Specific Plan was developed based on extensive public input received during the base reuse planning process. Additionally, this Specific Plan reflects input received during public review of previous drafts of the Specific Plan and its associated Environmental Impact Report, as well as from input received during presentations of the Specific Plan at Planning Commission and City Council hearings.

E. Statutory Requirements of the Specific Plan

This section describes the statutory requirements of the Specific Plan.

1. Required Contents

This Specific Plan has been prepared in accordance with the requirements of California Government Code Section 65451. As prescribed by law, the Plan includes text and diagrams that generally describe the following:

- The distribution, location and extent of all land uses, including open space.
- The proposed distribution, location, extent and intensity of major components of public infrastructure, such as transportation and drainage systems.
- The standards and criteria by which development will proceed.
- A program of implementation measures, such as financing measures, policies, regulations and public works projects.
- A statement of the relationship of the Specific Plan to the General Plan.

2. General Plan Consistency and Amendments

a. General Plan Consistency

State Law requires that any Specific Plan, such as the RAAP Specific Plan, must be consistent with the adopted General Plan. Riverbank adopted its General Plan, after a multi-year revision process, in 2009. The General Plan provides guidance for all future development with the City, as well as goals and policies for how the City should expand.

With few exceptions, the proposed Specific Plan is consistent with the Riverbank General Plan. Those exceptions are noted in the next section and a General Plan Amendment is proposed to provide conformity.

The consistency begins with the City's Vision as stated in the General Plan. The General Plan says that it wants to create an environment where "residents live, work and play locally". A "healthy and diversified industrial base served by its railroad" is desired along with "a wide range of employment . . . opportunities". Furthermore, an "appropriate balance between housing, commerce, industry, circulation, and open spaces for agriculture and nature" is desired. The Specific Plan helps to further this vision. The site will provide an excellent location for the growth of industry that can provide jobs for the City's residents. It currently provides a variety of jobs including many manufacturing jobs. Approval of the Specific Plan will encourage even more job growth. The property is served by the railroad

which provides excellent transportation options for its businesses. Locating jobs in the City will also improve air quality and traffic congestion caused by the need for City residents to commute.

In the Land Use Element, one of the main goals is that "Commercial and Industrial Development Contribute to the Health, Welfare, and Vitality of the Community". This project area is one of the City's main industrial areas. The Specific Plan will aid in the development of this site to meet this goal.

In the Community Character Design Element, there is an emphasis on the aesthetics of new development, particularly areas that can be seen from the public right-of-ways. This project helps to promote those desires. For example, this element requires attractive streetscapes and designates both Claus and Claribel Roads as Gateway and Urban Design Streets. The Specific Plan will require attractive streetscaping and commits to meeting any requirements that may be adopted by the City for Gateway streets. Furthermore, this element requires that "when new development, redevelopment . . . of industrial . . . complexes occurs, the City will require aesthetic and landscaping improvements of facades and entry features oriented to the street that will strengthen the identity of Riverbank. The project site has been in federal ownership for more than 60 years and has been developed in a more utilitarian manner than an aesthetically pleasing manner. Nevertheless, it does have some attractive industrial characteristics that will be maintained under this plan and enhanced with additions that will improve the look of the site.

The City's Conservation Element requires that buildings that are not historically significant but that have historical value should be preserved whenever possible. If this is not feasible, then the resource needs to be documented and the information retained. RAAP-2 is the only part of the site with any buildings on it. These are not historically significant but they do have some historical value. Most of the buildings will be retained but there are a couple of large buildings that will need to be demolished. They will be documented and the information retained as noted above. In addition, the most visible of the buildings is made of brick which will be reused on site to provide some retention of the "look" of the building.

The Conservation Element also promotes adaptive reuse of buildings. Although this site is no longer needed as an ammunition plant for the Army, it is in the process of being reused as an industrial park.

The Economic Development Element of the General Plan has several Goals/Policies that apply to this site. The overarching goal of the element is to "[plan] for a community where businesses can thrive and attract wealth, create jobs and income growth for local residents, generate revenue for local government, serve local market needs, and help revitalize older neighborhoods." The policies go on to encourage the exploration of business development opportunities with durable manufacturing industries and to maximize the opportunities using the railroad lines, spurs and shoreline railroads. In the past 3 ½ years, the RAAP-2 site has gone from 3 manufacturers to 9 manufacturers. In addition, the number of jobs provided on site has tripled. This growth is expected to continue and expand under the Specific Plan. With respect to the development of RAAP-1, interest has been shown repeatedly in this land because of the existence of the rail spur that serves the site. At present, the RLRA can only lease this property to others which makes it difficult for developers to get financing to build on the property. Transfer of the property to the RLRA will likely result in some quick land sales to developers for this property and this is largely due to the presence of rail.

b. General Plan and Zoning Amendments

California law requires a Specific Plan to be consistent with a City's General Plan and that findings regarding consistency be included in the Specific Plan itself. Although the following amendments to the City's General Plan and Zoning Ordinance will be necessary to allow its implementation, the recommendations, objectives, development standards and Design Guidelines of the RAAP Specific Plan are consistent with the overarching goals of the Riverbank General Plan and its associated Elements, including the direction given for this industrial area.

The following amendments to the General Plan will be required:

- Revise General Plan Figure LAND.4 on Page LAND-13 to show new designations for the Specific Plan Area.
- Revise General Plan Figure Circulation CIRC-1 on Page CIRC-11 to eliminate the extension of Townsend Avenue beyond Claus Road along the northern property line of the project as an east-west Collector Road. The existing railroad is active which makes the RAAP one of two industrial parks in Stanislaus County with active rail connections. Currently, the General Plan indicates the extension of Townsend Avenue east across Claus Road along the northern property line but there is no plan or desire to deactivate or remove the existing railroad.
- Revise General Plan Figure DESIGN.36 to add the Claus/Claribel intersection as an additional gateway.

The Specific Plan implements the General Plan and contains elements to guide development at the RAAP. The RAAP site is currently zoned Light Industrial. A zoning amendment will be required to ensure that the current uses at the RAAP are conforming. The proposed project includes a zoning district that will be added to the existing Zoning Ordinance. The zoning district boundaries will be consistent with the Specific Plan Area. For those provisions not modified by the Specific Plan, the similar zoning classifications in the City's existing Zoning Ordinance will apply. Should conflicts exist between the Specific Plan and Zoning Ordinance, the provisions in the Specific Plan will apply. Following modification, the RAAP Specific Plan will be consistent with the Zoning Ordinance.

F. Plan Contents

These additional chapters follow this introduction.

Chapter Two: Existing Conditions

» This chapter provides an overview of existing conditions on the RAAP site and its immediate surroundings.

Chapter Three: Vision and Concepts

» This chapter tells the "story" of the Specific Plan by providing a vision statement and documenting the major land use, urban design and other concepts proposed in the Specific Plan.

Chapter Four: Goals and Policies

» This chapter provides clear goals and policy statements for several topic areas.

Chapter Five: Land Use Designations and Development Standards

» This chapter provides the land use framework and designations for the RAAP, including the uses and densities allowed. The chapter also provides land use regulations and development standards for new development at the RAAP.

Chapter Six: Circulation

» This chapter discusses proposed circulation improvements and recommendations for the RAAP site, including potential vehicular, pedestrian, bicycle and parking improvements.

Chapter Seven: Infrastructure

» This chapter describes proposed improvements and extension of infrastructure facilities to meet ongoing and potential increased demand for utility infrastructure, including wastewater, water, stormwater, and dry utilities.

Chapter Eight: Implementation

» This chapter provides a strategy for implementing this Specific Plan, including phasing and financing strategies.

Appendix A: Design Guidelines: Industrial and Research & Development

» This document provides the design standards and guidelines for all new industrial and research & development construction on the former Riverbank Army Ammunition Plant.

Appendix B: Design Guidelines: Retail

» This document provides the design standards and guidelines for all new retail construction on the former Riverbank Army Ammunition Plant.

Appendix C: Model Standards & Specifications for Low Impact Development Practices

» This document provides the City's standards and guidelines for low impact development.

Appendix D: LID Stormwater Management for the Riverbank Army Ammunition Plant

» This document describes low impact development stormwater practices that were developed for the former Riverbank Army Ammunition Plant.

Appendix E: Riverbank Army Ammunition Plant Parking Assessment Memorandum

» This document provides additional detail regarding parking assessment as it pertains to the former Riverbank Army Ammunition Plant.

Appendix F: City of Riverbank Landscape Standards Approved Street Trees

» This document provides the current list of approved street trees used by the City of Riverbank.

Appendix G: Mitigation Measures and Monitoring Program

» This document describes the mitigation measures and monitoring requirements for this Specific Plan as included in the associated Environmental Impact Report.

Appendix H: General Raw & Sprinkler Map

» This document provides additional detail to the existing water circulation system on the former Riverbank Army Ammunition Plant.

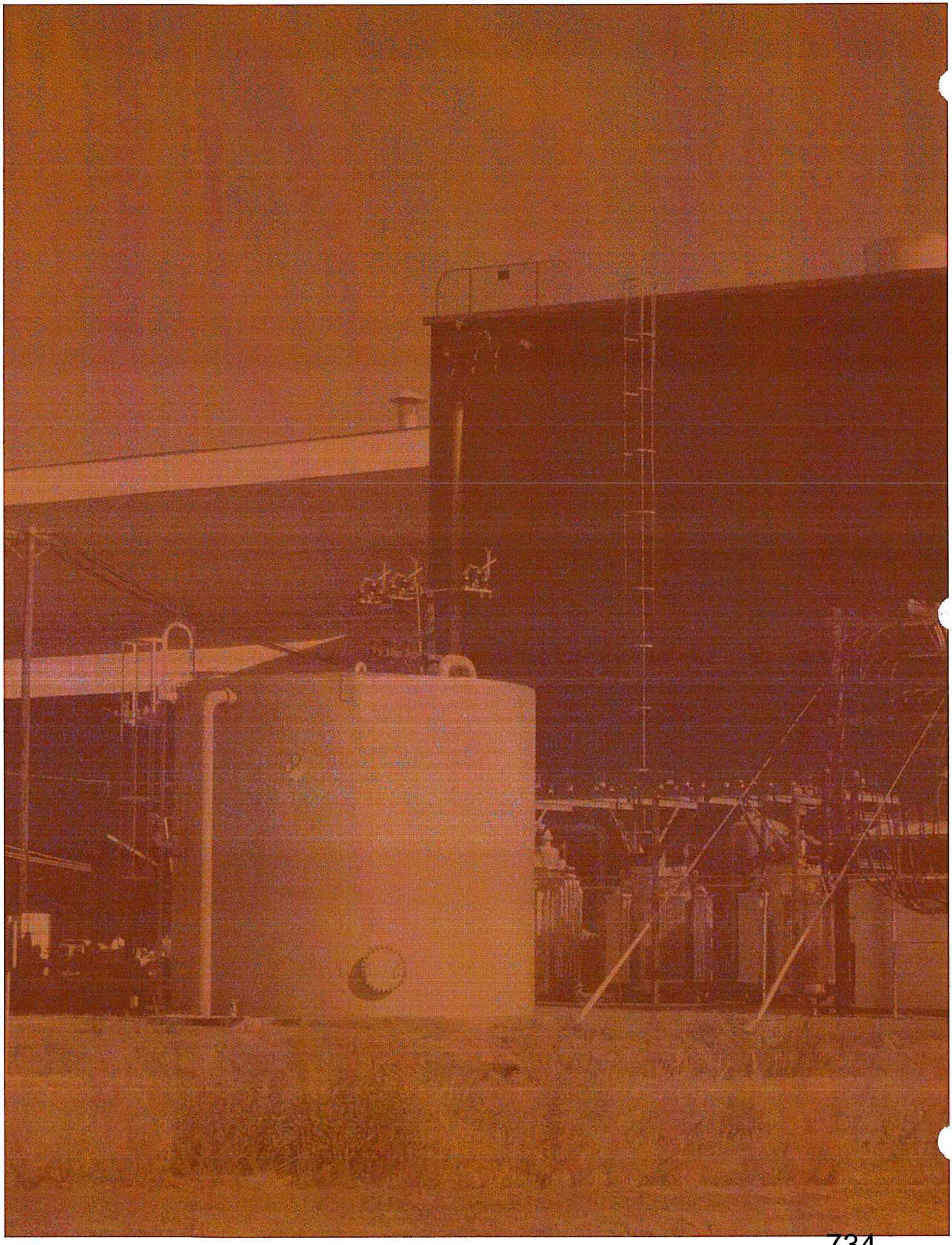
Appendix I: General Sanitary Sewer Map

» This document provides additional detail to the existing sanitary sewer system on the former Riverbank Army Ammunition Plant.

CHAPTER 2:

EXISTING CONDITIONS

In the initial stages of the planning process for this Specific Plan, a thorough review of existing conditions on the RAAP site was conducted. The results of that review are summarized in this chapter. The information herein is current as of December 2011, when the Specific Plan was being prepared. It is based on the research and field investigations conducted by the consultant team between May 2010 and April 2011.



2: EXISTING CONDITIONS

A. Land Uses

This section describes the existing uses on the RAAP site, as well as its immediate surroundings.

1. RAAP Uses

The RAAP site contains a variety of uses, ranging from vacant, undeveloped land to intensively developed industrial uses. As shown in Figure 2-1, the site can generally be divided into eight land uses. Land uses vary widely across different portions of the site, since much of the site is currently undeveloped.

- Existing Industrial Area. The developed portion of the RAAP is located in the central area of the site. Buildings in this developed area generally have large setbacks from public rights-of-way. The area's primary entries and parking lots are located adjacent to Claus Road, along the southern half of the site. The existing industrial area contains a wide variety of industrial uses and structures, including large buildings that were used to produce ammunition, storage structures, smaller manufacturing buildings, and outdoor storage. In addition to industrial facilities and storage areas, the existing industrial area contains parking areas, internal roads, limited undeveloped areas, and a former landfill that is now capped.

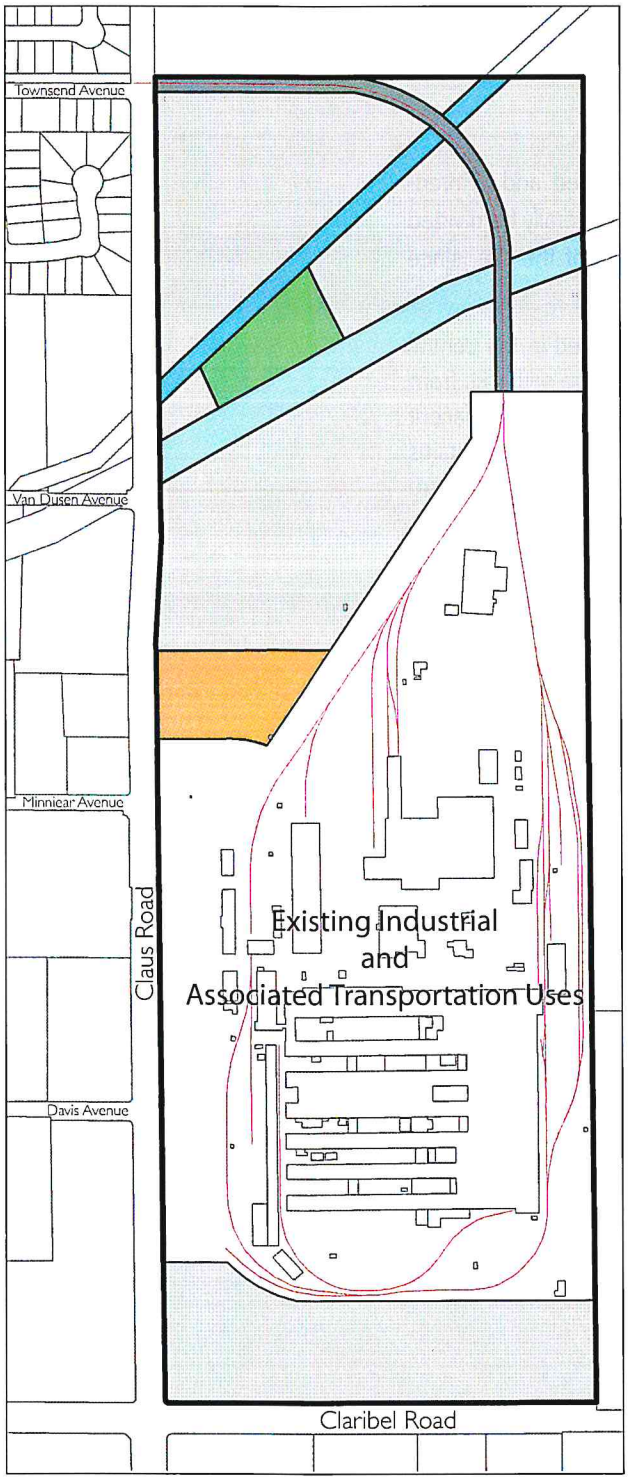
- Vehicle Storage. A small vehicle storage lot is located along Claus Road, between its intersections with Minniear Avenue and Van Dusen Avenue. Spaces in this area are currently being leased for storage of vehicles, primarily recreational vehicles. The lot operates independently of the existing industrial uses and is located outside the fences that contain most of these buildings.

- Undeveloped Land. A large portion of the RAAP site remains undeveloped. Undeveloped areas south of the existing industrial areas, along Claribel Road, are fenced off from the remainder of the RAAP site. The undeveloped areas in the northern portions of the site were historically used as pastures for livestock grazing.

- Stormwater Pond. As indicated in green on Figure 2-1, a stormwater pond is currently located between two easements in the northern portion of the site. This area serves as detention for stormwater runoff from the existing industrial areas.

- Hetch Hetchy Aqueduct. The Hetch Hetchy Aqueduct conveys water underground and also serves as a right-of-way for the conveyance of electricity through large overhead power lines. The Hetch Hetchy Aqueduct right-of-way runs roughly east-west across the site and is approximately 100 feet wide. It is owned by the San Francisco Public Utilities Commission (SFPUC).

Figure 2-1 Existing Land Use



» Oakdale Irrigation District. The Oakdale Irrigation District (OID) canal is located near the northern portion of the site and runs from the northeast to the southwest. The canal's right-of-way easement is approximately 60 feet wide, and the actual infrastructure for the canal is located underground.

» Rail Easement. An active rail line surrounded by a 50-foot easement enters the RAAP site at its northwest corner, near Townsend Avenue. The rail, which connects to the Burlington Northern Sante Fe rail line, runs across the undeveloped areas in the north and crosses both the Hetch Hetchy Aqueduct and the Oakdale Irrigation District canal. Ultimately, the rail enters the existing industrial areas, splits and serves many of the existing buildings.

2. Surrounding Uses

The existing industrial area on the main site is bordered on the north and east by pasture land and rural residential uses, to the south is Claribel Road and additional pasture and rural residences. Low-density residential uses and an RV storage area are located west across Claus Road on the northern half of the site. A trucking facility, with on-site truck storage, is located west across Claus Road at the southern extent of the site, near Davis Avenue.

B. Existing Land Use Policy

This section discusses existing land use policies governing the Specific Plan Area.

1. General Plan Land Use Designations

The Riverbank General Plan is intended to serve as a long-term vision and guide for the future of the city. A critical component of the General Plan is its land use designations, which guide the types of development that should take place on individual parcels and in different areas of the city. The various designations prescribe the general land use types and land use intensity that are desired. As shown in Figure 2-2, the majority of the RAAP site is designated Industrial/Business Park (I/BP). However, additional designations include Medium-Density Residential (MDR) and Buffer/Greenway/Open Space (B/G/OS). The General Plan's description for each designation on the RAAP site is as follows:

- Industrial/Business Park (I/BP). This designation includes manufacturing uses, as well as a mixture of light manufacturing and office spaces. These uses may be located in campus-like settings sometimes referred to as "business parks" or "research parks." This category is meant to accommodate a variety of employment-generating, basic (as opposed to community serving) enterprises. Office parks could accommodate businesses of various types, research and development, logistics services, and other uses. Areas with this designation near existing or future planned residential and other sensitive land uses are subject to performance standards to ensure against noise, traffic, safety, light spillage and glare, and other impacts typically generalized as "compatibility."

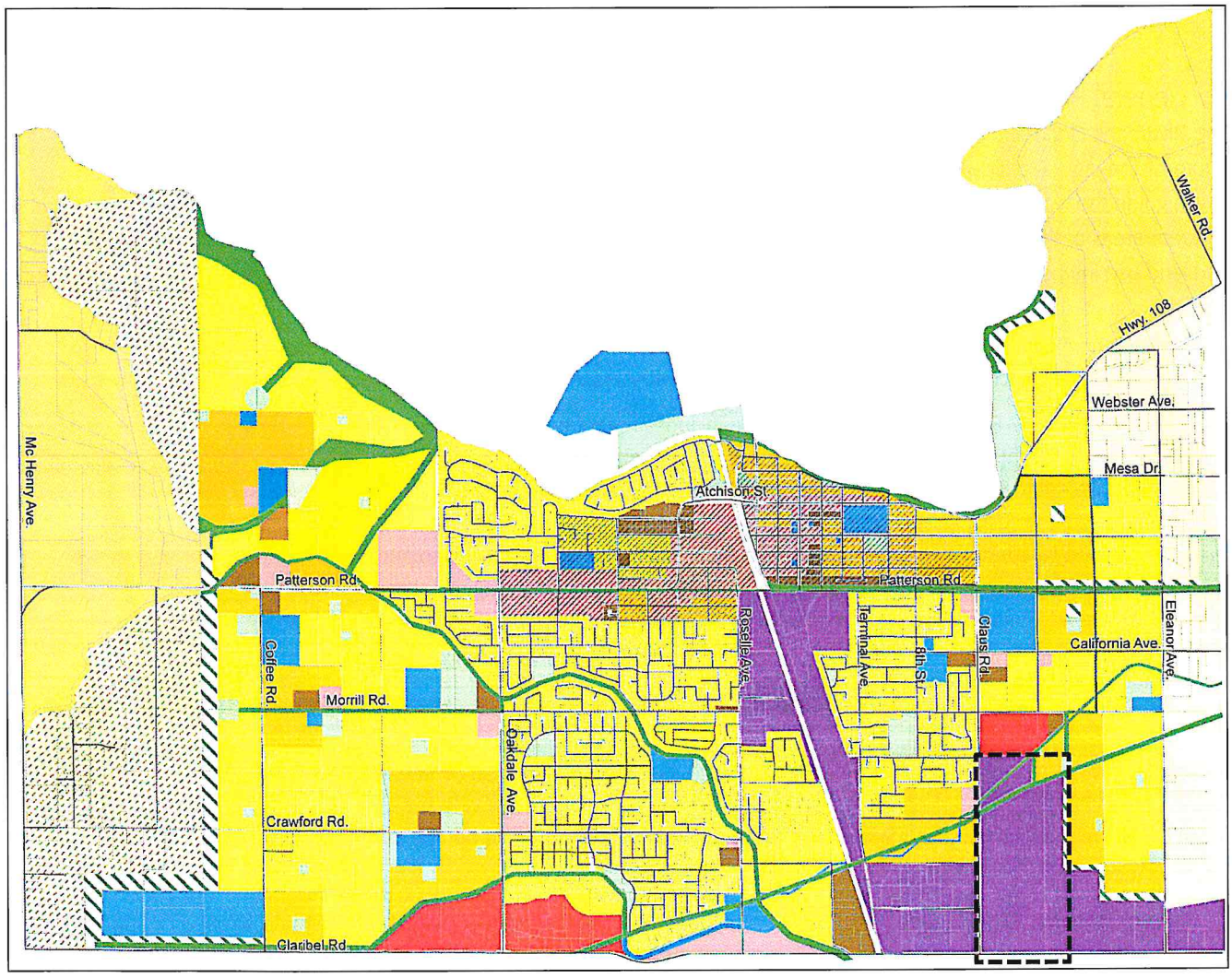
- Medium-Density Residential (MDR). This category includes small-lot, single-family detached homes, attached single-family homes, and other residences developed at a net density of between eight and 16 dwelling units per acre. Lots would be at least 2,500 square feet in size.

- Buffer/Greenway/Open Space (B/G/OS). This designation provides the opportunity to preserve important open spaces containing natural resources, such as sensitive biological habitat. This category also includes areas where buffering is necessary between different land uses. Bicycle and pedestrian pathways are also accommodated by this Land Use Designation.

2. Zoning

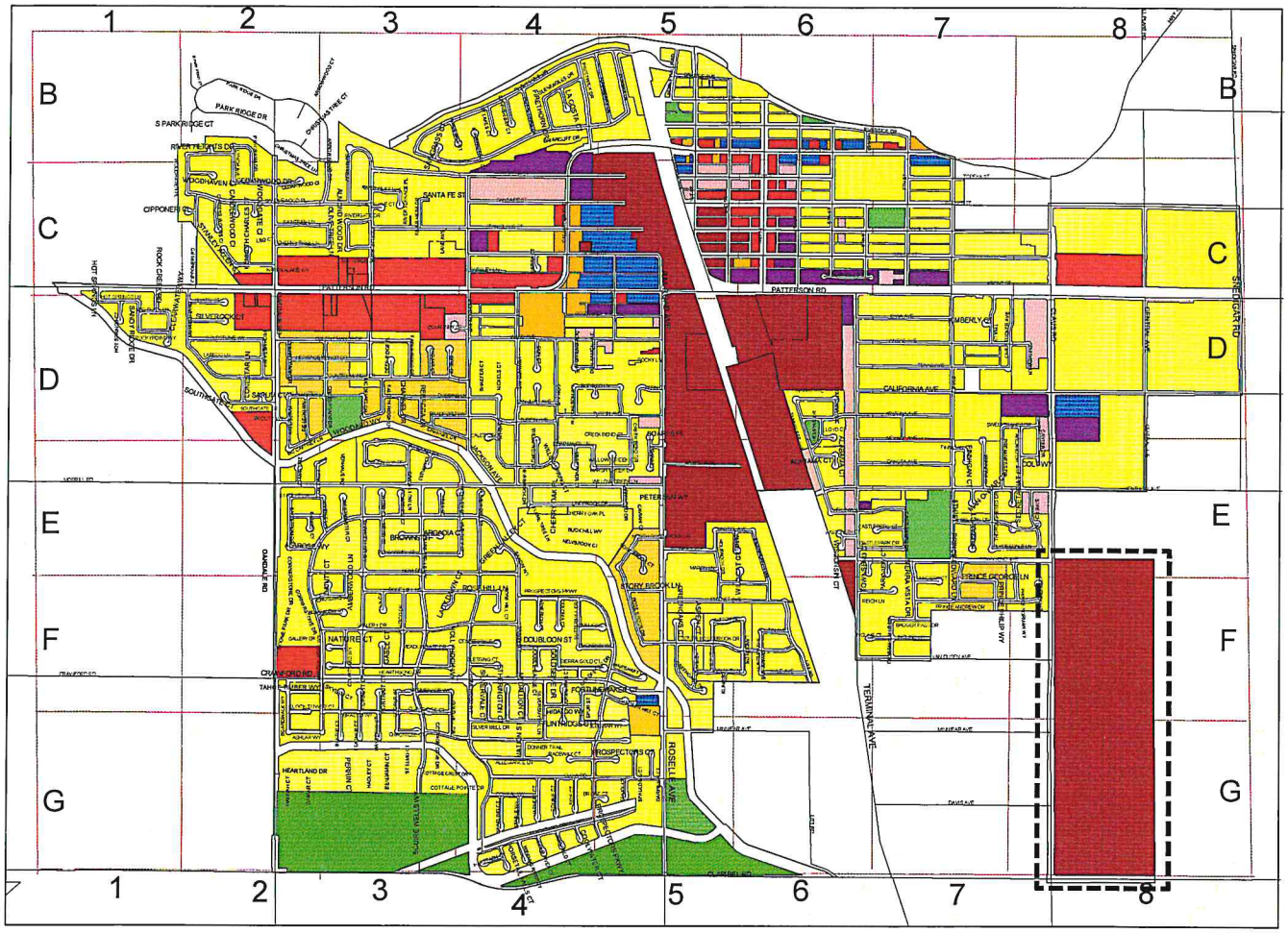
Riverbank's Zoning Ordinance is intended to implement the goals and policies of the General Plan by prescribing more detailed land use regulations and development standards. More specifically, the City's Zoning Ordinance dictates in detail the uses allowed on individual parcels and the building requirements for new development. Chapter 153 of the City's Municipal Code describes the City's zoning districts and each district's associated requirements.

Figure 2-2 Riverbank General Plan Land Use Designations



As shown in Figure 2-3, the RAAP site is zoned Light Industrial (M-1).

Figure 2-3 Riverbank Zoning Ordinance Map



C. RAAP Design Character

This section describes the urban design character of the RAAP sites, focusing mainly on site layout, relationships between buildings on the site, and relationships between the site and surrounding uses.

1. Urban Design Character

The design character of the existing industrial areas of the RAAP site is generally utilitarian. The majority of buildings are concentrated in the southern half of the existing industrial area, with the largest and most intensive uses concentrated around the main production line facility. All but one building on the site is oriented to run in either a north-south or east-west direction. This building orientation creates rectangular-shaped areas between buildings that are used for outdoor storage or to provide space for small sheds and equipment. Other than the main production lines, which are exceptionally tall, most of the buildings are low-rise, single-story structures. Building heights are generally consistent across the site.

The second primary group of buildings is located north of the main production line facility. Existing buildings are set further apart from one another in this area, creating concrete areas between buildings that are used for outdoor storage or to provide space for small sheds and equipment.

The character of the edges of the RAAP property varies but generally creates an open feel due to the lack of buildings near the street edge. The edge adjacent to Claus Road has an open character with large undeveloped lots separating the edges of existing industrial buildings by approximately 600 feet. Similarly, the edge adjacent to Claribel Road is open with buildings along its frontage being set back significantly. Most of the Claribel Road frontage is lined with undeveloped open space, with the exception of frontages adjacent to the existing industrial areas, which are lined with various surface parking areas.

2. Architectural Character

The existing architecture at the RAAP is typical of industrial architecture during World War II in that it emphasizes honest expression of building technologies of that time, as opposed to ornamental forms typical in traditional architecture.

The existing RAAP buildings were designed solely for their function as industrial and manufacturing spaces, with the following key attributes:

- Box-like buildings with flat, sawtooth or monitor roofs
- Steel-frame construction
- Ample fenestration
- Minimal or no exterior ornamentation

The buildings that line the western edge of the existing industrial areas on the RAAP site differ in architectural character from the buildings on the rest of the site. These buildings were designed for administrative purposes and their character is less utilitarian in nature. As such, they incorporate greater architectural detail, with keystoned, splayed lintels at doors and windows, gabled roofs, and regular fenestration in a domestic-institutional pattern.

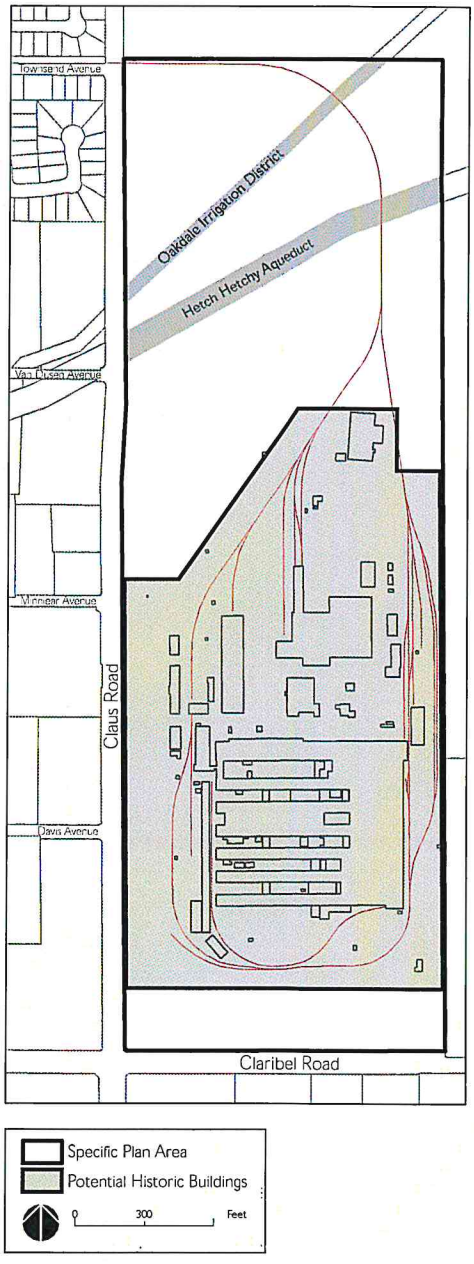
D. Historic Resources

The developed portion at the RAAP appears to be eligible for the California Register of Historic Places as a historic district. Specifically, it is significant under Criterion 3, which states that a historic resource "embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values." Specifically, it is significant as a representation of historic design of manufacturing facilities within the context of industrial architecture.

It should be noted that not all buildings and infrastructure on the site would be considered historically significant. The primary period of significance is from the RAAP's inception in 1942 until 1958 and would encompass buildings and other significant site elements, including roads and rail lines. Although the site has changed physically since the period of significance described above, the RAAP still retains historical integrity. Figure 2-4 shows areas with potentially historic buildings at the RAAP.

Table 2.1 lists the buildings and structures that have been recorded and may be eligible for listing in the National Register of Historic Places (NRHP) and a portion of the developed site may be eligible as a historic district under the California Register of Historical Resources (CRHR). However, the City does not intend to pursue nor does this Plan propose such a designation. Many of the buildings have been altered or demolished and those remaining will continue to be modified to accommodate changes in manufacturing and industrial needs as well as address building maintenance and safety concerns. Policies are proposed within this Plan to seek protection of existing historic character and incorporate these architectural elements in new construction. No special permits are necessary for modifications to these potentially historic buildings but prior to demolition of buildings in this list, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation will need to be conducted for the affected structures. HABS/HAER technical documentation consists of informa-

Figure 2-4
Areas with Historic Buildings



tion recorded in standard formats: measured drawings, photographs from large-format black-and-white negatives and color transparencies, and written histories. Documentation guidelines are currently maintained by the National Park Service and are available through their website: www.cr.nps.gov/hdp/standards/guidelines.htm.

Table 2-1 RAAP Site Properties Potentially Eligible for NRHP Listing

STRUCTURE (Building Number in Parenthesis)	YEAR BUILT
Administration and Gatehouse (16 and 17)	1942
Boiler House (12)	1942
Building 120	1951
Building 120 A	1953
Carbon Rodding Building (7)	1942
Garage (130)	1954
Cafeteria (18)	1942
Machine Shop (9)	1942
Metals Service Building, Press Room (8)	1942
Ore Unloading Building (11)	1948
Paint Spray Building (169)	1978
Plant Cafeteria (21)	1951
Pot Room For Aluminum Production (1 through 5)	1942
Production Line (46)	1952
Rectifier Station, Production Line (13)	1942
Terminal House (110)	1951
Transformer Oil Pump Building (85)	1951
Transformer Service Building (15)	1942
Unloading Shipping Building (10)	1942
Washroom (14)	1942
Water Wells 1 through 5	1942

Source: Knapp Architects, 2009.

E. Economic Setting

This section discusses the economic setting within Riverbank and the region with respect to redevelopment of the RAAP.

1. Market Context

Achievable rent levels for facilities of the type available for redevelopment or reuse at the RAAP are generally low, in the range of $4.25 per square foot per year ($0.35 per month). As a result of the current recession, there is an ample supply of comparable but functionally superior space available in the region. This constitutes a challenge for the RAAP's short-term redevelopment. Similarly, achievable industrial land values are estimated to be in the $50,000 to $60,000 per acre range, with significant competitive land supply currently on the market. As a result, the LRA will need to work aggressively in attracting new tenants to ensure job creation.

2. Potential for Redevelopment

The City of Riverbank is committed to redeveloping the RAAP as an economic engine and job creator for the City. As an initial step, the City has supported planning for reuse by developing this Specific Plan and by supporting existing tenants at the RAAP.

Existing tenants have expressed an interest in leasing additional space at the RAAP. In addition, the LRA has completed extensive infrastructure evaluations as part of the operational planning process, which is being used to inform capital planning.

3. Potential Job Creation

Reuse and redevelopment of the RAAP is expected to yield significant job creation. Overall, the redevelopment project is expected to create between 825 and 1,650 permanent jobs on-site in the next ten to fifteen years, both by attracting tenants to existing buildings and through development of the undeveloped portions of the site. The redevelopment of the RAAP will also provide short-term employment gains from construction activities for new development, infrastructure upgrades, and improvements to existing structures.

F. Transportation and Circulation

1. Current Traffic Conditions and Trends

Claribel Road and Claus Road are two-lane roadways that currently carry an ADT of approximately 8,000 vehicles per day, with large trucks accounting for approximately 10 percent of traffic volumes. The daily Level of Service (LOS) for Claribel Road and Claus Road in the vicinity of the RAAP is LOS B. The signalized Claus Road/Claribel Road intersection operates at LOS C during both the morning and evening peak hours. Both roadways are planned to be four + lane arterials.

2. Access Points to the Site

Claus Road, a two-lane arterial, provides sole vehicular access and serves as the western boundary of the RAAP site. Truck and rail are the primary means of delivery to the site. Vehicular access to the interior of the existing industrial area is through a gate on the western portion of the site, south of the existing RV storage area. Rail enters the site from the northwest corner and then circulates around the perimeter and through the interior.

3. Parking

A parking design assessment was prepared in November 2010. Based on this assessment, peak parking demand rates per employee were developed for the industrial uses as presented in Table 2-2. The rates are similar to those in the City of Riverbank Municipal code, which requires one parking space for each employee on a maximum shift plus three additional spaces for industrial uses. When the number of employees cannot be determined, one space for every 300 square feet of gross floor area is required. City Code parking requirements for each of the uses that could be constructed as part of the RAAP Specific Plan is presented in Table 2-3.

Table 2-2 RAAP Specific Parking Demand Rates Per Employee

CONDITION	REGULAR	VISITOR	ADA ACCESSIBLE	MOTORCYCLE	TOTAL
Average Peak Parking Demand	56	6	2	5	68
Demand Rate per Employee	0.86	0.09	0.03	0.08	1.06
Maximum Peak Parking Demand	60	6	2	7	75
Demand Rate per Employee	0.92	0.09	0.03	0.11	1.15

Source: Fehr & Peers, September 2010.

Table 2-3 Existing City Code Automobile Parking Requirements

LAND USE	PARKING CODE REQUIREMENT
Industrial	1/300 square feet
Research and Development	1/300 square feet
Local Retail	1/300 square feet plus loading

Source: City of Riverbank Parking Code Requirements (153.184).

4. North County Corridor Planning

The North County Corridor (NCC) is a high priority project for Stanislaus County that would improve west-east connectivity and relieve traffic congestion. The Tier 1 project for NCC consists of constructing an expressway between McHenry Avenue east to SR 120; Tier 2 would extend the facility from McHenry to SR 99. This Specific Plan addresses Tier 1 of the North County Corridor project (NCC) which has been funded; funding for full build-out of the corridor has not yet been identified and no alignment has been adopted.

The City of Riverbank has signed a Joint Powers Agreement and, upon alignment adoption and certification of the necessary CEQA analysis, the City will amend the circulation element and reserve right of way for the NCC project. The City's preferred alternative includes the relocation of Claribel Road to the north, ending in a "T" intersection at Claus Road at the main entry to RAAP; Central Avenue is extended midway down the eastern edge of the project turning east and continuing to a new intersection. The NCC would be located where Claribel Road currently exists and the intersection at Claus Road would be realigned and become an undercrossing. This alignment will require a large right-of-way which would essentially eliminate the development of the South End Cap.

This Specific Plan, along with the City's Circulation Element, will need to be amended if an alignment is adopted and CEQA documents are certified.

G. Infrastructure Service

This section discusses existing infrastructure service at the RAAP.

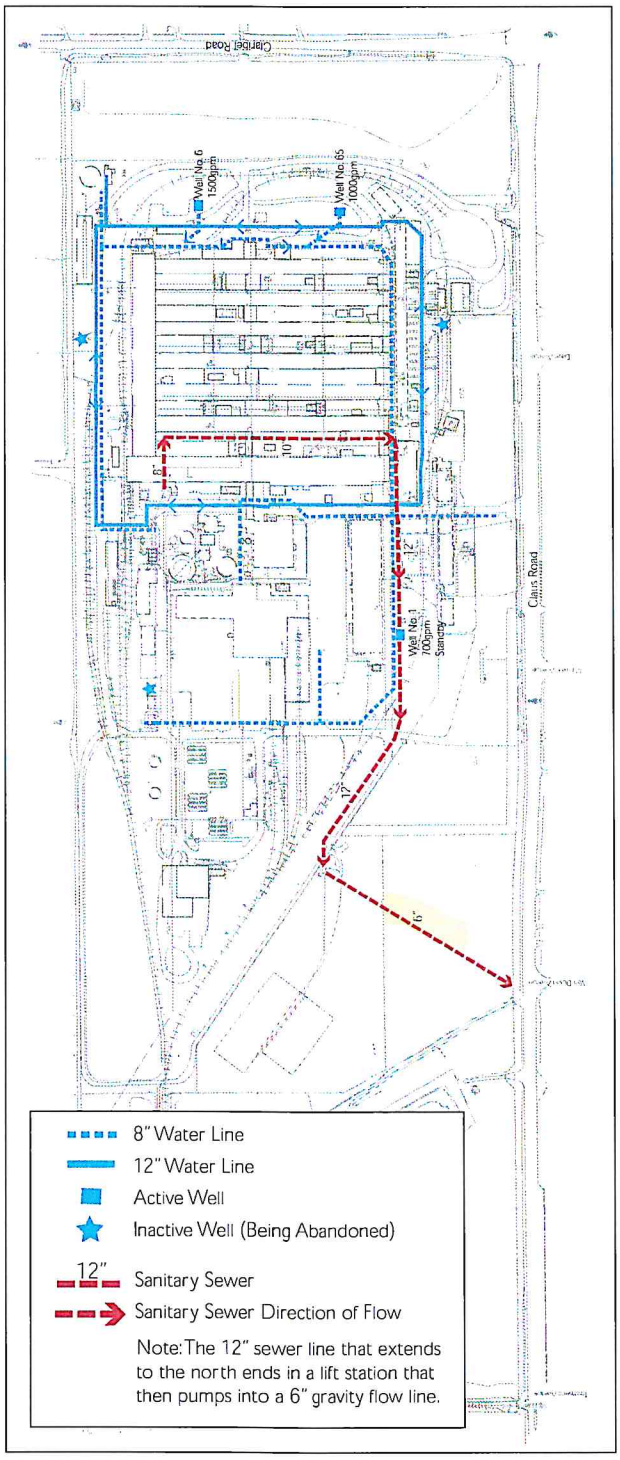
1. Water

This section assumes that water usage at the RAAP is a constant over an 8-hour period with both pumps operated continuously and 40,000 gallons of storage capacity.

A single water system serves the entire developed portion of the facility and obtains its water from three active wells located on the property. There are a total of six wells on the site. Currently, only three wells are operational. Of these three, one is on standby. The three non-operational wells are in the process of being properly abandoned and closed by the Army in consultation with California Department of Public Health. Figure 2-5 shows the existing wells along with raw and sprinkler waterlines larger than 8-inches.

The potable water system has one storage tank, which has a 100,000 gallon capacity. Currently, the storage tank is operated over a range of zero to 40,000 gallons. The capacity is restricted to 40,000 gallons due to seismic constraints. There is also a 1,000,000 gallon water tank that is used to provide adequate fire flow but is not used for potable water.

Figure 2-5
Water and Sanitary Sewer Map



During the 8-hour usage period, the flow to the distribution system is 2,600 gallons per minute (gpm) from the wells and 83 gpm from storage (40,000 gallons/8 hours), so the maximum potential usage of the existing system is 2,683 gpm.

2. Wastewater

The present sanitary sewer system transfers the domestic sanitary sewer waste to the City of Riverbank sanitary sewer system. Figure 2-5 shows sewer mainlines 8-inches and larger in size. Treated groundwater from the groundwater treatment plant is sent to evaporation ponds owned by the Army near the Stanislaus River. It is anticipated that the Army will continue to treat and dispose of the groundwater in this manner for the next 10-20 years or more.

The sanitary sewer collection system begins as a series of 6-inch pipes in the main production line area. These pipes drain to the north by gravity feed and become progressively larger as waste from additional buildings is added. Ultimately, one 12-inch diameter pipe conveys waste to the lift station north of Building 9. From the lift station, waste is transferred by a 4-inch diameter force main before transitioning back to gravity flow and connecting to the City's collection system. There is also an additional lift station near the Industrial Wastewater Treatment Plant (IWTP). The total length of the gravity sanitary sewer system is approximately 6,078 linear feet.

The system is built mostly of reinforced concrete pipe with some small sections of cement asbestos and corrugated metal pipe. There are over 55 manholes and clean-out locations. Due to the age of the concrete pipe, there are many areas with vertical and/or horizontal pipe cracks. Based on a camera assessment conducted in September 2009, the severity of the cracks range from minor superficial cracking to at least one section of collapsed pipe. Additionally, there are pipe segments of both vertical crowns and valleys, meaning the gravity system cannot function properly since material settles in these areas. There are also many instances of cracked or offset joints in the sewer lines.

Pipes range in size from 6- to 12-inches in diameter. As of August 2010 when many of the buildings at the RAAP were vacant, the system operated on an average of 10% of its total capacity. This figure is based on the following assumptions:

» 100 gallons/day per 1,000 square feet of industrial/commercial space
» 200 gallons/day per 1,000 square feet of administrative space

Based on a camera investigation conducted in September 2009, many deficiencies were noted that will require correction. The main issues noted were:

» Cracked or offset joints
» Horizontal or vertical cracking in the concrete pipe
» Low areas in pipes where waste is settling
» One crown in the pipe where the pipe is actually raised

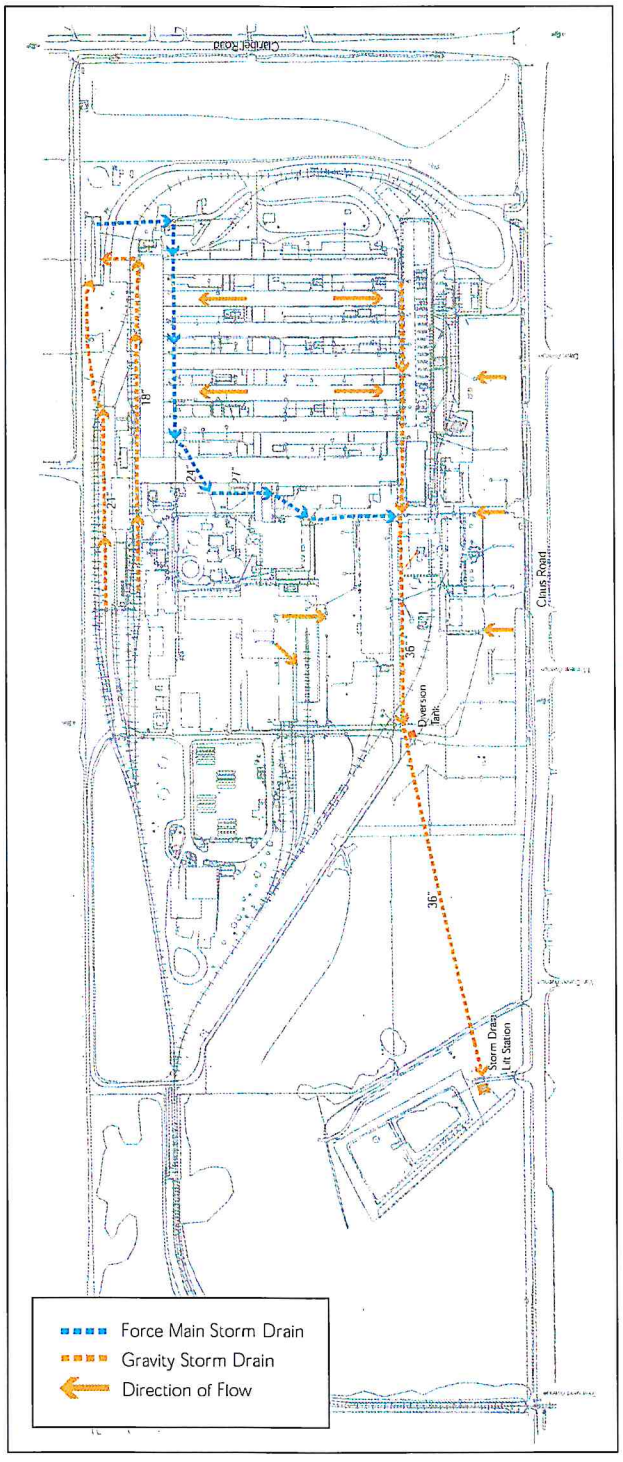
3. Stormwater

The stormwater collection system is shown in Figure 2-6. Primary stormwater collection is made in two phases. Stormwater in the southeast quadrant flows to the large basin near tank 139 in the southeast corner of the site. From this pond, the water is pumped to the main line via 6-inch vitrified clay pipe and connected to a 12-inch reinforced concrete pipe. Through the eastern edge of Existing Industrial Area, the pipe increases in size from 12-inch to 24-inch before turning to the west and then running parallel to Building 7. An additional 12-inch pipe is located between the western edge of the Existing Industrial Area and Building 13. This pipe is reinforced concrete and increases in size to 30-inches in diameter near Building 15. At this point, connection is also made with the area drains on the western edge of the site in the parking lot. Near Building 15, the pipe is 36-inches in diameter and continues to flow by gravity to the area near Gate 10 where a 600 gallon per minute pump is located. The water then flows to an additional storm drain lift station before being stored in the storm drain reservoir. Historically, during periods of excessive rain, any overflow was conveyed to the Oakdale Irrigation District 30-inch diameter line that runs parallel to the reservoir but this connection has been severed. Any excessive rain is now handled on site by backing up into parking lots without flooding buildings.

The storm system transports stormwater runoff from the developed portion of the site to the stormwater ponds on the undeveloped northern portion of the site. The system is operating properly, but with some deficiencies identified during inspection. Portions of the camera assessment were abandoned due to debris in the line. The deficiencies include:

» Cracked or offset joints
» Longitudinal cracking in the concrete pipe
» Low areas in pipes where waste is settling

Figure 2-6
Stormwater Collection



The correction of these items can also be accomplished by re-lining or slip-lining the pipe. The manholes should also be repaired to ensure the lids seal properly to prevent inflow and infiltration of storm water during rain events.

The north reservoir has a design capacity of approximately 3.0 million gallons (MGAL). More specifically, the capacity includes 1.5 MGAL in the west side, which typically has approximately two feet of ponding water, and 1.5 MGAL in the east side, or overflow side, which is typically dry.

A small portion of the site drains to the south stormwater reservoir, located near the southeast corner of the site. This reservoir is referred to in other documents as Area 135. A lift station adjacent to the south stormwater reservoir pumps runoff from the reservoir to the south end, or high side, of the above-mentioned main storm drain.

4. Natural Gas

The main natural gas feed for the RAAP is provided by Pacific Gas and Electric (PG&E). The feed enters the site at the southeast corner of the site and is then carried to a metering and mixing station. Natural gas then is fed to the few buildings and infrastructure that require natural gas on the site. Pipe sizes range from 2-inch to 10-inch in diameter.

Given the size of the existing pipe network and the relatively low demand for natural gas, no immediate upgrade is necessary. Current tenants do not use pieces of equipment that have large natural gas demands.

5. Electrical Utilities

The electrical distribution system equipment for the developed portion of the site, on an average, has been in service for over 50 years, well beyond its expected service life. However, some new substations have been added. The older substation secondary distribution systems are 480 volt ungrounded Delta systems.

The existing main substation with the new 5 mega volt ampere (MVA) transformer on-line has approximately 50 percent spare capacity, beyond the current site demand, for additional loads.

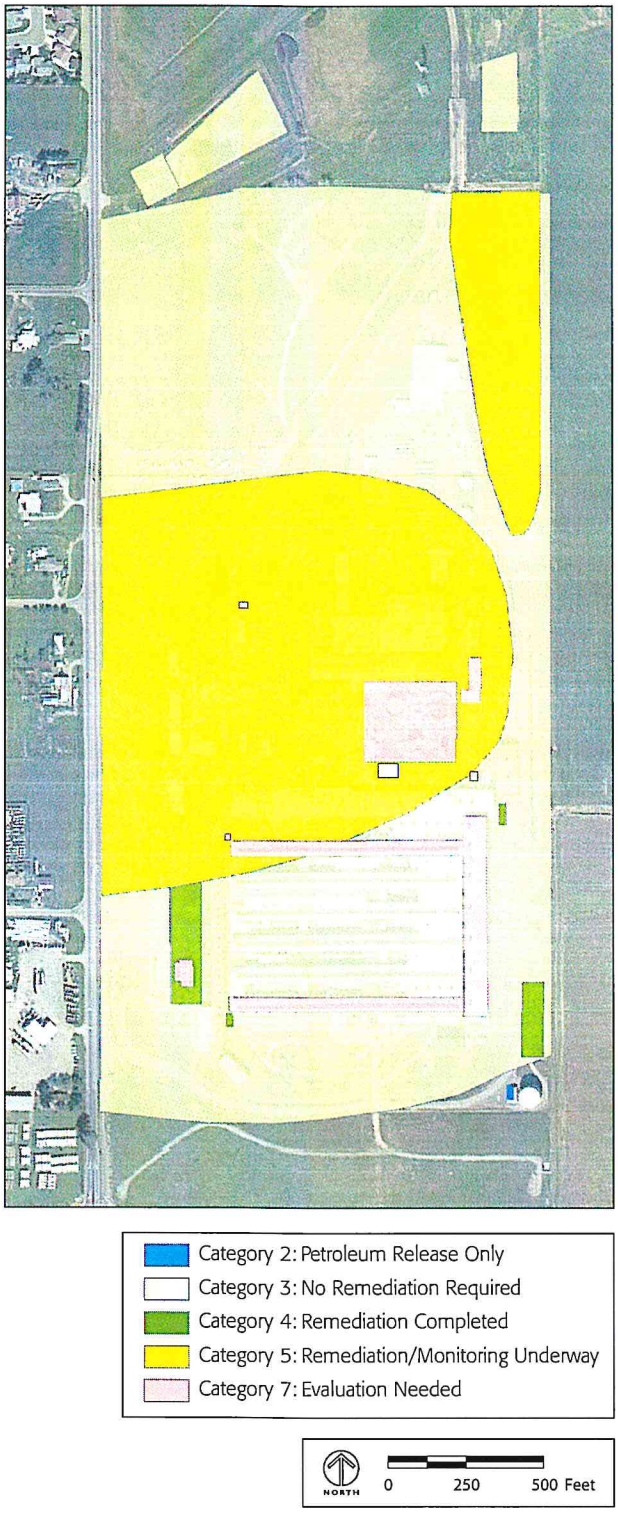
H. Hazardous Materials

The RAAP is currently listed as a federal Superfund site due to groundwater contamination and other pollutants at the site. Some remediation has already occurred and further remediation is planned for the future. Additionally, there are areas and buildings on the RBAAP site that may require investigation and study to determine the extent of contamination. The existing stormwater pond and the developed industrial core area are currently being remediated; until remediation is completed no food preparation or retail sales are allowed in these affected areas.

As shown on Figure 2-7, there are several different levels of contamination on the site. The most significant contamination issue is a plume of subsurface groundwater contamination that contains chromium and cyanide; the plume resulted from past spills at the Industrial Wastewater Treatment Plant (IWTP). While the defects that caused the spills have been corrected, further treatment is required to remediate the contamination to State and federal standards. There are also other areas with less significant contamination issues, some of which limit where future development can occur. Areas within the RAAP site were divided into the following seven categories:

- **Category 1.** No contamination.
- **Category 2.** Areas where only the release of petroleum has occurred.
- **Category 3.** Areas where contamination has occurred at a level that requires no further remediation.
- **Category 4.** Areas where sufficient remediation has already taken place and no further action is necessary.
- **Category 5.** Areas where contamination has occurred and remediation is underway, but further action or ongoing monitoring is required.
- **Category 6.** Areas where contamination has occurred, but for which no remediation effort has been implemented (no Category 6 sites were identified at RAAP).
- **Category 7.** Areas requiring further assessment.

Figure 2-7
Environmental Remediation Requirements



The landfill area has been characterized as being underlain with groundwater contamination that do not require removal or other remedial response. The Existing Industrial Area has been classified as having groundwater contamination; removal or other remedial actions are underway but not all required actions have been taken. The groundwater contamination includes both chromium and cyanide above the Maximum Contamination Level (MCLs). The area of the North End Cap located south of the north reservoir has groundwater contamination but removal or other remedial response is not required due to the low concentration. The South End Cap is located south of the main development, immediately north of Claribel Road. This area is currently undeveloped and no existing contamination issues have been identified.

The *Environmental Condition of Property Phase I Report,* published in November 2006, describes the degree of remediation needed on the site and identifies areas and buildings that require further assessment.[1] Some of these areas and buildings were assessed in 2007, resulting in the publication of a *Site Investigation Report* in March 2008. The document reports the findings of additional assessment and identifies those areas and buildings for which no further assessment is necessary. [2]

A site visit to review visual environmental site conditions occurred in 2009. Not all areas were accessible due to being locked or requiring tenant permission for access. The site walk focused on the Existing Industrial Area including Buildings 1, 2, 5, 6, 7, and 8 of the former production line areas, Building 11 (the former spheroidizing facility), as well as the industrial water treatment facilities, and landfill.

[1] *CH2M HILL, 2006, Environmental Condition of Property Phase I Report, U.S. Army Corps of Engineers, page ES-15.*

[2] *CH2M HILL, 2008, Site Investigation Report, U.S. Army Corps of Engineers, pages 4-1 to 4-8.*

Buildings in the Existing Industrial Area exhibit a range of former and current industrial use. A partial list of observations includes the following:

- visible staining on floors;
- active and stored equipment including hydraulic lifts;
- remnants of wall or pipe insulation, material and equipment storage;
- equipment labeled with non-standard labels as polychlorinated biphenyl (PCB)-tested;
- vinyl tile floors which may have asbestos;
- several potentially asbestos containing transite panels and areas of missing panels;
- potentially asbestos containing fire proofing material on building walls;
- potential PCBs in the hydraulic storage tanks for the lifts; and
- signs of decay of wiring coating (suspect for potential asbestos, lead and PCD content) on electrical feeds run from transformer to exterior of building.

Due to the majority of the buildings being constructed before 1978, it is highly likely that all structures have lead based paint present. [3]

Only one minor area of friable asbestos was noted during the investigation with the remainder being non-friable asbestos. Further investigation is necessary as a complete asbestos survey should be performed on the entire site to identify all areas of concern. [4]

During a field investigation the galbestos siding on several of the buildings were sampled to assess if the material was friable. During additional research into the potential friability issues associated with galbestos, information was obtained that some forms of galbestos are coated with a non-liquid polychlorinated bi-phenols (NL-PCBs). Galbestos, also known as Robertson Protected Metal (RPM), is a special siding panel used in fire-retardant applications. RPM was available in several forms, but generally consisted of corrugated metal with asbestos felt and an outer tar coating on both sides. Twelve of the 21 samples collected from 21 buildings that appeared to contain RPM siding indicated the presence of PCBs. [5]

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[3] *Weston, 2010, Operations and Infrastructure Assessment, City of Riverbank, pages 16 to 17.*

[4] *Ibid.*

[5] *Ibid.*

Visual evidence at the IWTP indicates that one clarifier is out of use and the other has minimal usage; the majority of process tanks appear to be defunct and not maintainedl; chemical placarding did not appear to match actual material being stored; and acids and bases appeared to be stored in the same containment area. A waste bin storage area is present next to the IWTP and several bins were in use. Some staining was observed in the area south of the IWTP.

The landfill area appears to be well maintained; no erosion from the top or sides was evident and no obvious signs of subsidence were apparent. The vegetation appeared consistent across the area and burrowing animal traps were located at regular intervals around the base of the landfill.

CHAPTER 3:

VISION AND CONCEPTS

This chapter presents the vision for the RAAP and presents specific design strategies for the achievement of that vision.



A. RAAP Vision Statement

This Specific Plan envisions that:

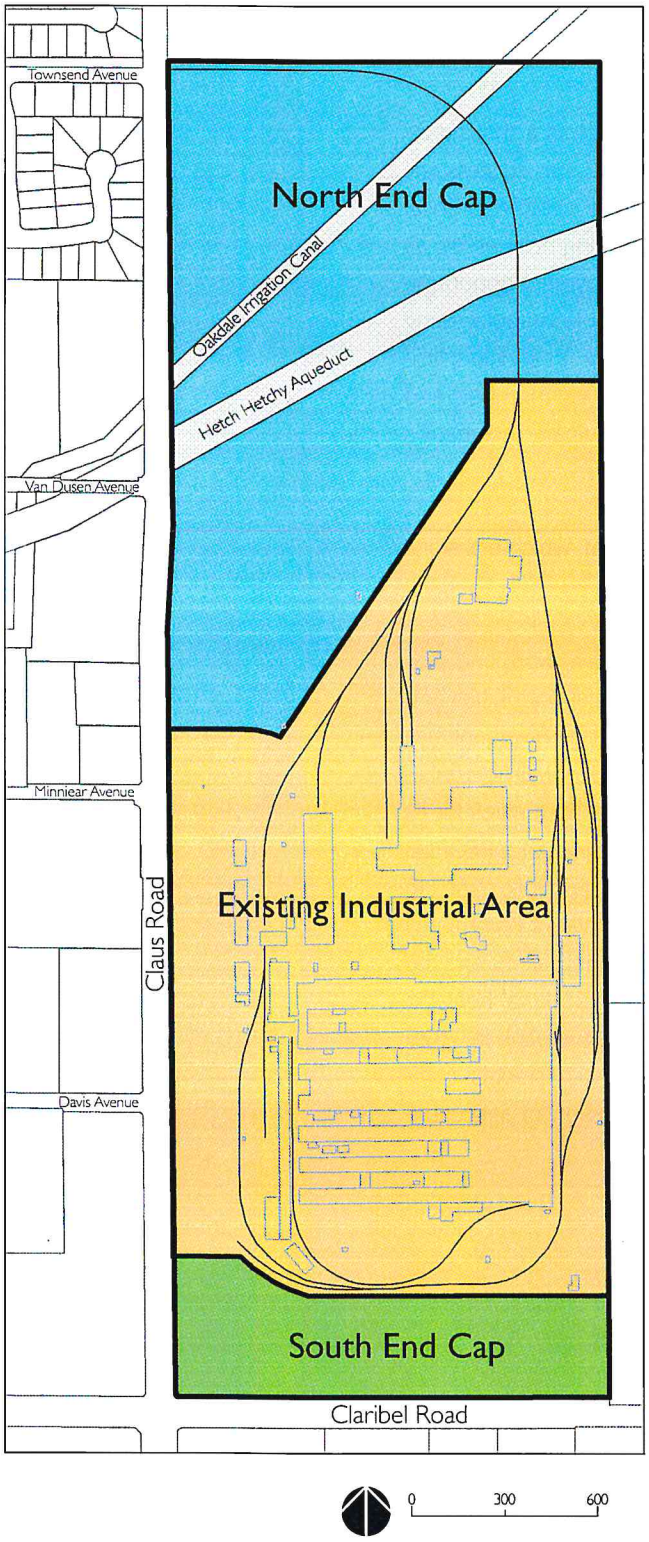
The former Riverbank Army Ammunition Plant will continue its success as a thriving industrial park that is occupied by a variety of manufacturing businesses. This success will strengthen Riverbank's economic well-being by providing jobs that are suitable for local residents. The RAAP will support the retention and expansion of existing businesses, as well as the attraction of new businesses that provide high-quality employment opportunities. A new green business park will attract environmentally sustainable manufacturing businesses, alternative-energy product designers; and research facilities. In addition, limited retail areas will provide for some of the everyday needs of community members and the RAAP's workers. Finally, the former base will provide a location where Riverbank's growing businesses can expand and thrive.

This is consistent with the City of Riverbank's adopted Vision Statement, which envisions that:[1]

Riverbank in 2025 has a small-town character where residents can live, work and play locally. The City has a thriving downtown that offers a variety of retail opportunities and services, and functions as the social and cultural heart of the community. Riverbank has a healthy and diversified industrial base served by its railroad, safe and walkable/bikeable neighborhoods, and a wide range of employment and housing opportunities for its diverse population. Although we welcome automobiles, Riverbank is a place for PEOPLE. Those who choose not to drive can easily and safely walk, bicycle, or use public transit to get to work, school, shopping, or a local park. Riverbankers' strong sense of community identity is reflected in its public gathering places and activities, architectural variety, and the ways in which the City's riverfront location, railroad-oriented history, agricultural heritage, and other unique qualities are celebrated in the built environment. Riverbank in 2025 has succeeded in creating a BALANCE between housing and jobs for its residents, commerce and industries that support the local economy, and the protection of agriculture and natural resources.

[1] *City of Riverbank, 2005, City of Riverbank General Plan: 2005-2025, pages IN-1 and IN-2.*

Figure 3-1 RAAP Subareas



B. Land Use and Circulation Concept

This section describes the land use and circulation concept for the Specific Plan Area. As shown in Figure 3-1, the Specific Plan Area can be divided into the following subareas:

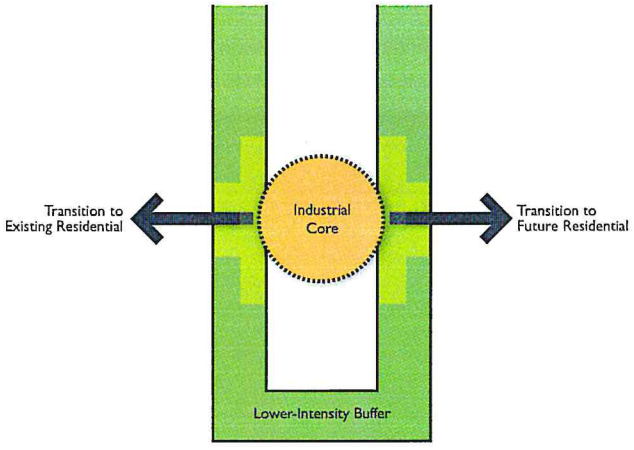
- » Existing Industrial Area
- » North End Cap
- » South End Cap

These subareas are defined based on existing character and future development potential, and these names will be referenced throughout the remainder of this Specific Plan.

1. Land Use Transitions

As shown in Figure 3-2, the Land Use Concept for the RAAP site focuses on concentrating more intensive industrial activities in the Existing Industrial Area, as well as in the interiors of the South End Cap and North End Cap. Following this concept will help ensure that uses in the Specific Plan Area are sensitive to adjacent uses and include effective transitions toward these uses. Specifically, development on the west and east sides of the RAAP site should create a transition toward existing residential areas and future residential areas, respectively.

Figure 3-2 Land Use Transitions



Furthermore, concentrating lower-intensity uses along Claus Road will provide the greatest opportunity to provide aesthetic improvements to this primary corridor as it enters Riverbank since these uses require less outdoor storage and can be enhanced with landscaping to a greater degree.

2. Existing Industrial Area

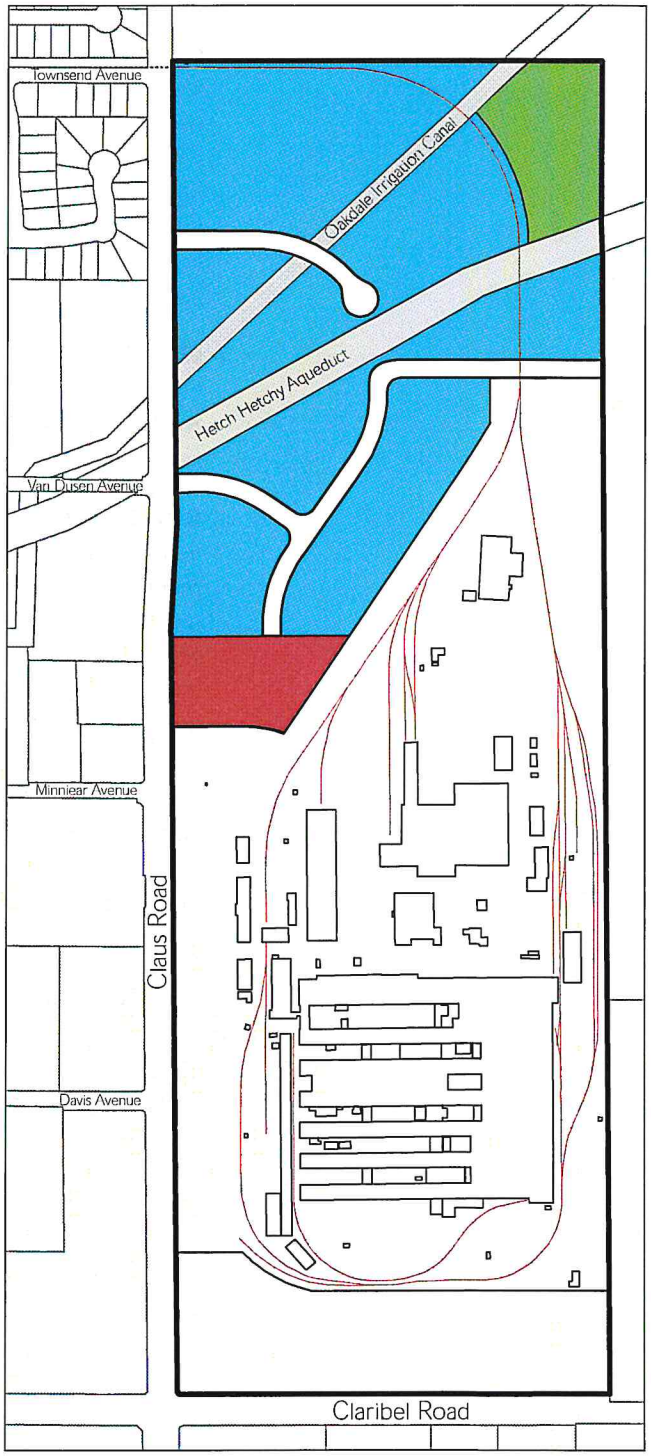
It is recommended that the Existing Industrial Area be retained as it is now. The Specific Plan does allow additional buildings and modifications to existing buildings in this area, with efforts made to maintain the historic character and preserve the viability of this area for future heavy industrial uses. Additional landscaping is also recommended for this area in the Specific Plan, both for improved aesthetics and to implement principles of low-impact development (LID). It is anticipated that new development in this area would be of a similar character to existing development and range from one to two stories.

3. North End Cap

As shown in Figure 3-3, the following uses are proposed for the North End Cap:

» **New Roadway.** A roadway network is recommended in the North End Cap that includes two entrances from Claus Road, one near Van Dusen Avenue and one approximately 800 feet further north. This network is preferred, but the exact location and configuration of future roads in the North End Cap will be determined at a future date as projects are proposed.

Figure 3-3 North End Cap



» **Northern Industrial/R&D.** The Specific Plan recommends a mix of research and development (R&D) and industrial uses in this area, which would be planned for collectively as an R&D/industrial park. Recommended uses range from light industrial uses to higher-end office and R&D uses, such as solar panel design and manufacturing, flexible office space, biotech research facilities, as well as other light manufacturing. The Specific Plan recommends that more intensive industrial uses be located in the interior of the Northern Industrial/R&D and that less intensive office uses be located closer to Claus Road. R&D/Industrial uses will be between one and three stories in this area.

» **Claus Retail.** New retail uses are proposed on the west side of the RAAP site along Claus Road, between the Van Dusen Avenue and Minniear Avenue intersections. Single-story retail with surface parking is envisioned for this area. Uses could include restaurants, dry cleaners, clothing stores, grocers, or other similar uses.

» **Retention Pond.** The current storm drainage pond only serves the developed portion of the site (RAAP-2). In order to provide storm drainage for additional development in this area. This pond could be expanded at its current location or expanded and relocated to a better location. New development will utilize LID principles of storm drainage disposal and provide any needed storage on-site. It is possible that if the pond is relocated, it could be sized to handle the entire Specific Plan area thus freeing up additional developable space; any relocation of the retention pond would be at the developer's discretion and cost. The need to relocate the stormwater pond could be triggered if more impervious surface is added to RAAP-2 and additional storm drainage capacity is required. This relocation would require a minor administrative amendment under the process as described in Chapter 8. While the Specific Plan calls for the LRA to investigate this concept further, it does not commit the City to implementation of this concept.

» **OID Relocation.** The OID canal currently transverses the site and presents challenges for siting new R&D and industrial development in the North End Cap. There is a road easement that goes 60 feet from centerline in favor of Stanislaus County. There are three proposed alternatives for relocating the OID canal which would allow for more feasible development of the North End Cap by creating larger, uninterrupted parcels; these alternatives may or may not be pursued. Option 1 pushes the OID canal into the northern adjacent parcel, running west along the property lines, turning south and running on the east of Claus Road until it crosses Claus Road at its current location. Option 2 has the OID canal routed south to and then southwest parallel to the Hetchy Hetchy Aqueduct. Option 3 has the OID canal reconfigured to run along the northern and western perimeters of the RAAP site.

» The OID Riverbank Drain runs along the eastern and southern edges of the project. There is no recorded easement for the drain on the north side of Claribel Road but OID could claim a prescriptive easement; OID has recorded rights-of-way downstream and upstream of that area OID's standard easement for an open ditch is 60' to the north of Claribel and 40' to the south of Claribel for a pipeline, both being centered on the facility. Regardless of the ownership of the facility (whether County, OID or private), the drain water would need to continue to be conveyed as it historically has through this area. Whether this is accomplished by pipeline, rerouting, etc. is up to the developer of the project impacting the historical operations. Any proposed driveway on Claribel Road east of Claus Road will require an encroachment permit subject to approval of the OID Board of Directors. The underlying fee title holder would need to fill out an application for a structure permit and pay a deposit; the deposit is currently $300 but is subject to change. OID staff would evaluate the application and prepare documents to take to the Board of Directors for approval. Application does not guarantee approval of an Encroachment Permit but as long as plans adhere to District Standards and Specifications and do not interfere with District operations, they would generally be approved; this would include piping the drain. Bioswales are typically not installed as the District removes bioswale plants when cleaning drains. Developers will need to meet with District staff prior to development plan preparation to work out the details that would be acceptable to the District.

» The other potential scenario is to request that the drain no longer be a District facility which must also be approved by the Board of Directors. In that instance, an Encroachment Permit would not be necessary. OID staff is in the process of reviewing District drains and may potentially privatize the drain before development may occur on the project. The Developer will need to coordinate efforts with the OID.

4. South End Cap

As shown in Figure 3-4, the following uses are proposed for the South End Cap:

» **Claus/Claribel Retail.** Retail uses are also proposed at the corner of Claus and Claribel Roads to take advantage of this prominent corner. Single-story retail with surface parking is envisioned for this area (uses similar to those proposed for Claus Retail described above).

» **Southern Industrial/R&D.** The southern undeveloped area on Claribel Road is proposed for R&D/industrial uses. Higher-end R&D and office development is proposed at this location. Proposed uses are similar to those proposed for the Northern Industrial/R&D described above. Development would be between one and three stories in this area.

Figure 3-4a
OID Relocation Option 1

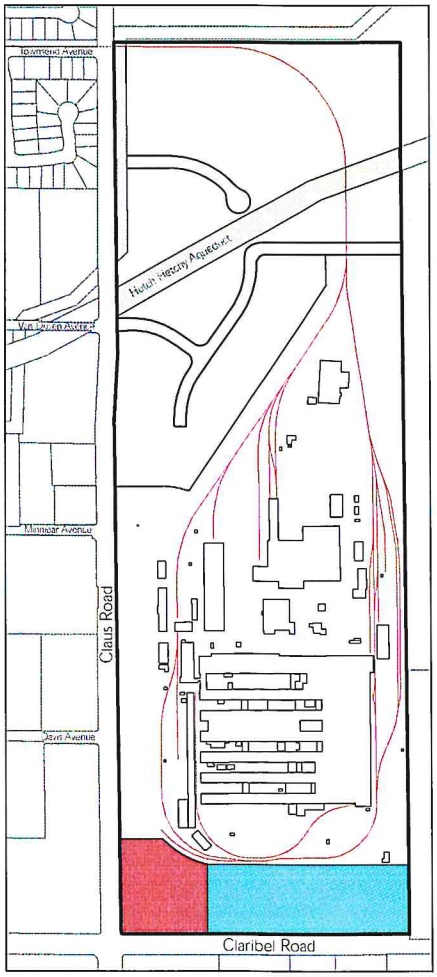


Figure 3-4b
OID Relocation Option 2

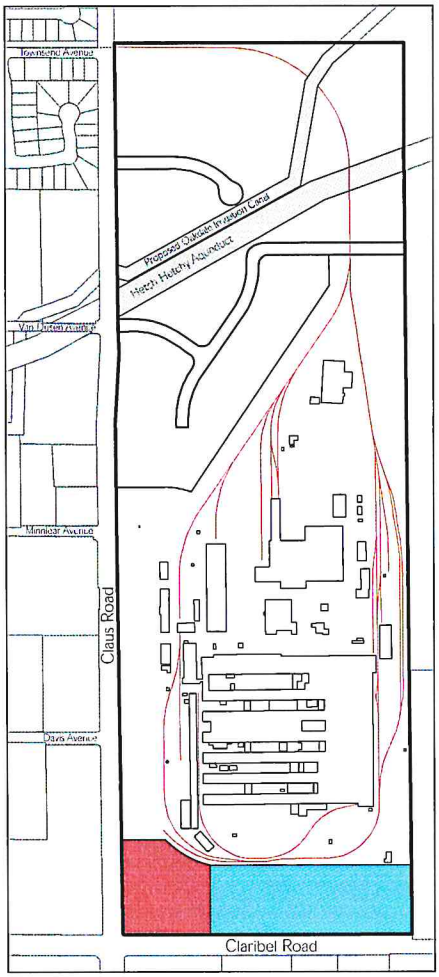
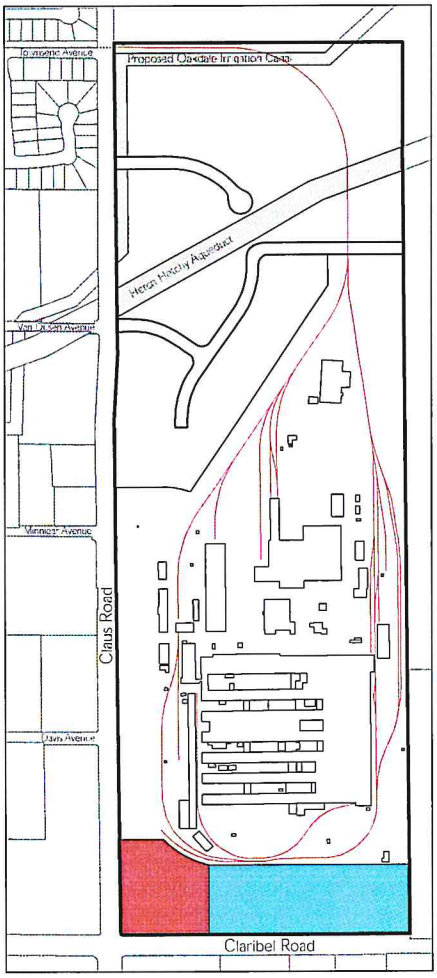


Figure 3-4c
OID Relocation Option 3



Southern Industrial/R&D
Claus/Claribel Retail

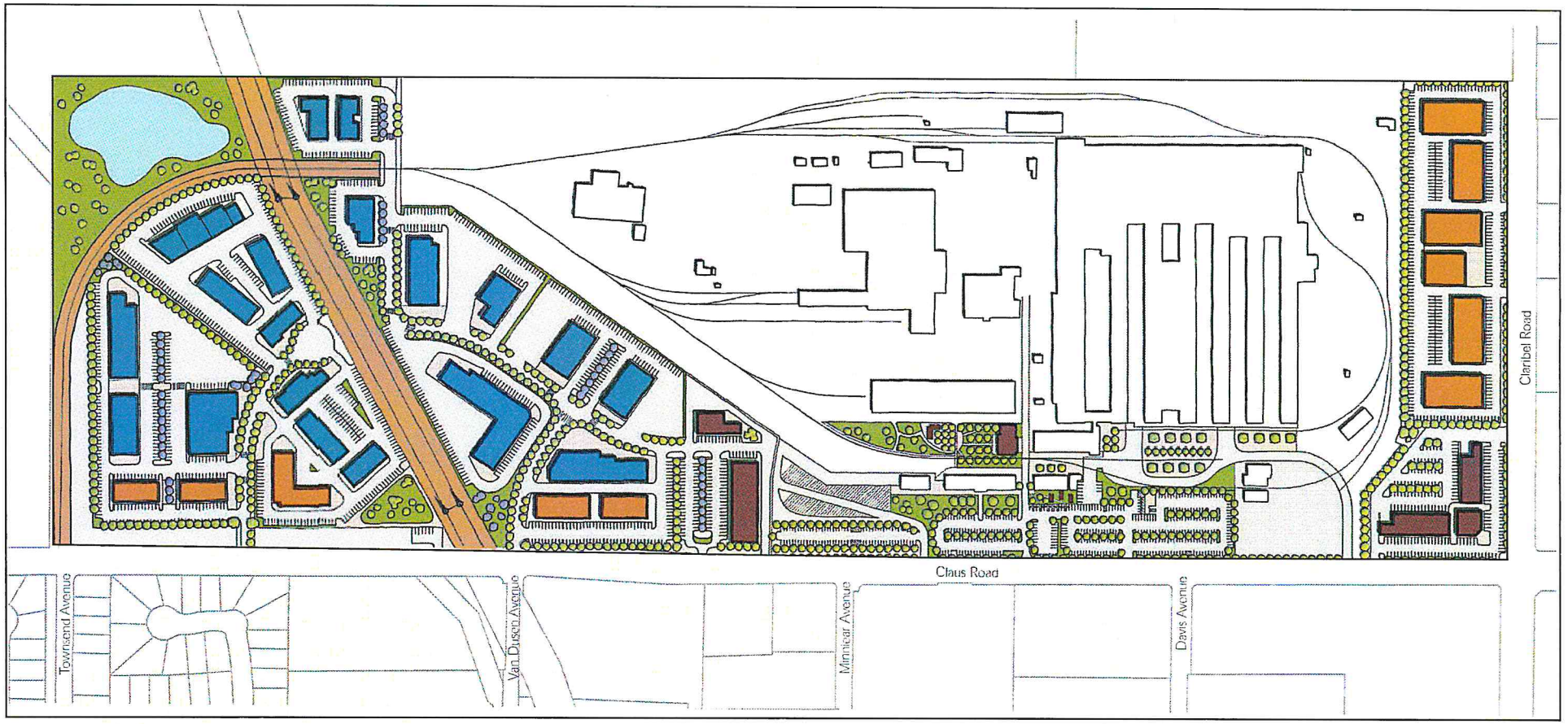
0 300 Feet

C. Development Concepts

This section is intended to illustrate how the North End Cap and South End Cap subareas of the RAAP site might ultimately be developed, based on the design and land use principles in this Specific Plan. Figure 3-5 shows a conceptual illustrative plan that depicts the potential build-out of private development and public improvements recommended by this Specific Plan. The illustrative plan is designed to show feasible site plans for new development, but is strictly conceptual. The exact locations of new development and improvements will be determined during implementation of this Specific Plan, in more detailed design processes and during approval of specific development projects. In this illustrative, burgundy represents retail, orange represents R&D, and blue represents industrial.

This section provides recommendations for the development of the Specific Plan Area for several topics, including building and street layout, circulation, and open space.

Figure 3-5 Conceptual Illustrative Plan



1. Building and Street Layout

The following principles govern the layout of new buildings and streets at the RAAP:

- Relationship of Buildings to Streets. As shown in Figure 3-5, buildings should generally face streets or should be designed so as to respond to the presence of streets. For example, the building in Figure 3-6 is oriented toward the interior street in the North End Cap area. Main entrances and windows, landscaping, plazas, publicly-accessible open spaces, water features, or other elements of a development should be oriented to the street.
- Building Form and Height. Buildings in the Specific Plan Area should be between one and three stories.
- Termination of Axes. Where possible, it is important to provide landscape elements, special building features, or other special elements where streets intersect or terminate. As shown in Figure 3-7, the entry feature, signage and landscaping is located at the terminus of the street.
- Gateway Elements and Entryways. Gateways and entry features are recommended at primary entries to the RAAP site. These features should provide a clear indication of the uses and buildings in the adjacent area, as well as attractive landscape elements that benefit the public realm. Figure 3-8 shows a perspective of a potential newly constructed entry feature at the Existing Industrial Area.

Figure 3-6 Building Facing the Street

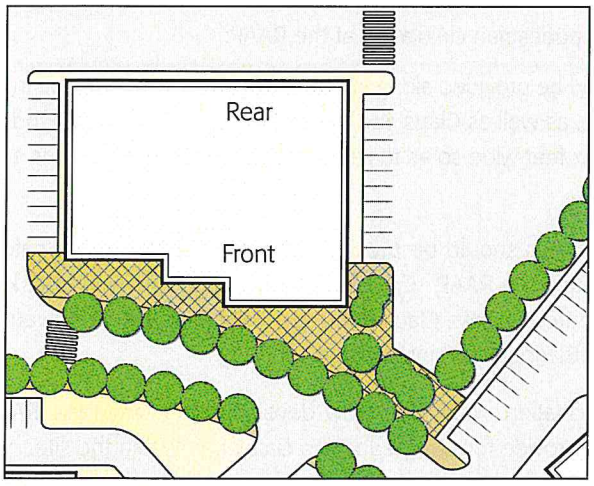


Figure 3-7 Terminated Axis

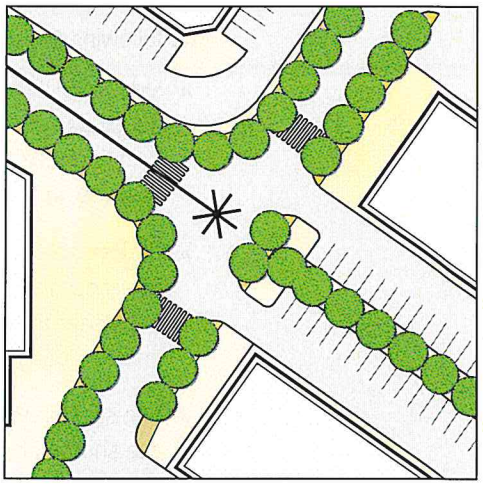


Figure 3-8 Potential Gateway at Entrance



2. Pedestrian Circulation

The following principles govern pedestrian circulation at the RAAP:

» Sidewalks. Sidewalks should be provided along all street frontages, including the interior streets of the RAAP site, as well as Claus and Claribel Roads. It is recommended that sidewalks be at least six feet wide so as to safely accommodate pedestrians and serve as an amenity.

» Pedestrian Crossings. Crossings should be provided at key points to ensure safety for pedestrians traveling within the RAAP. Crossings should also be provided at key entryways to the RAAP site from across Claus Road, particularly at Minniear Avenue and at the Claus Road and Claribel Road intersection.

» Site-specific Pedestrian Circulation. Individual new developments within the RAAP site should be designed to provide for safe pedestrian circulation within the site. For example, sidewalks and crossings through parking lots should be clearly demarcated and connect building entrances, parking areas, and open space areas.

3. Vehicular Circulation

The following principles govern vehicular circulation at the RAAP:

» Safe Circulation for All Drivers. Development should be designed to safely accommodate a variety of vehicular circulation, including employees' vehicles and delivery trucks. Sufficient queueing space should be provided for delivery vehicles where necessary. Additionally, there should be sufficient entrances and exits so that all vehicles can safely enter and exit individual developments.

» Parking Location. The majority of parking should be provided behind buildings to ensure more attractive street frontages. Visitor and employee parking should be separated and clearly indicated.

» Reconfigured Parking at Existing Industrial Area. It is proposed that the current parking lot in the Existing Industrial Area be converted from angled parking to 90 degree parking to better accommodate anticipated parking needs as industrial space in this area is leased and the number of employees increase.

4. Open Space and Landscaping Improvements

The following principles govern the provision of open space at the RAAP:

» Public Open Space. Figure 3-5 shows several potential opportunities to provide common open spaces that could be shared by the various tenants at the RAAP, as well as the general public. These spaces could be programmed in a variety of ways, but passive open spaces within the interior of the RAAP site are recommended. For example, open spaces could be provided at a few central locations accessible to employees and the general public. These could provide places for company events, impromptu lunches, or other gatherings. Figure 3-9 shows an example of how a single development could provide a publicly-accessible open space, as well as a private open space that would be restricted to employees. Development is encouraged to provide public open space to the extent feasible based on sensitivity of business activities and site constraints.

» Private Open Space. Private open space should also be provided where possible within the interior of sites. These spaces can provide opportunities for break areas for employees, as well as water features that assist in stormwater management. Figure 3-10a shows how new private open spaces could be incorporated into the Existing Industrial Area.

» Parking Area Landscaping. Figures 3-10b and 3-10c show a reconfigured parking lot at the Existing Industrial Area. In addition to adding capacity as discussed above, there are opportunities to provide enhanced landscaping and entry features in this location. As shown, the parking lot could be enhanced with a new pocket park near the main RAAP visitor entry point. Additionally, new planted medians can be provided in the parking lot to better demarcate spaces, add to the aesthetic quality of the site by providing opportunities to provide trees, provide shade, and potentially assist in stormwater management.

Figure 3-9 On-Site Open Space

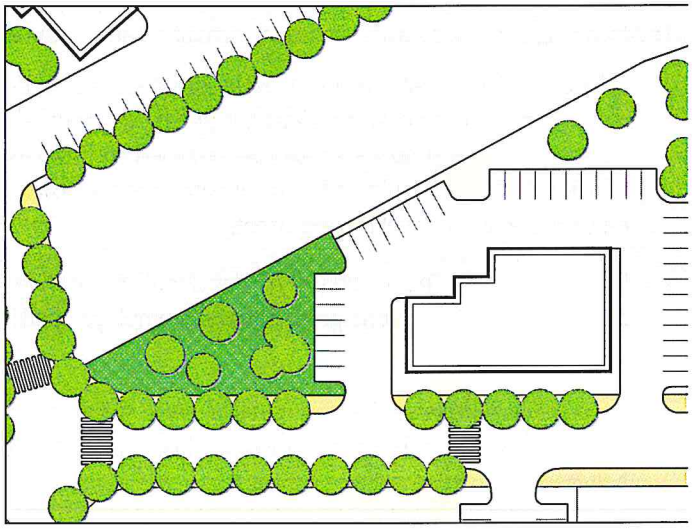


Figure 3-10a Open Space and Landscaping Concepts



Figure 3-10b Open Space and Landscaping Concepts

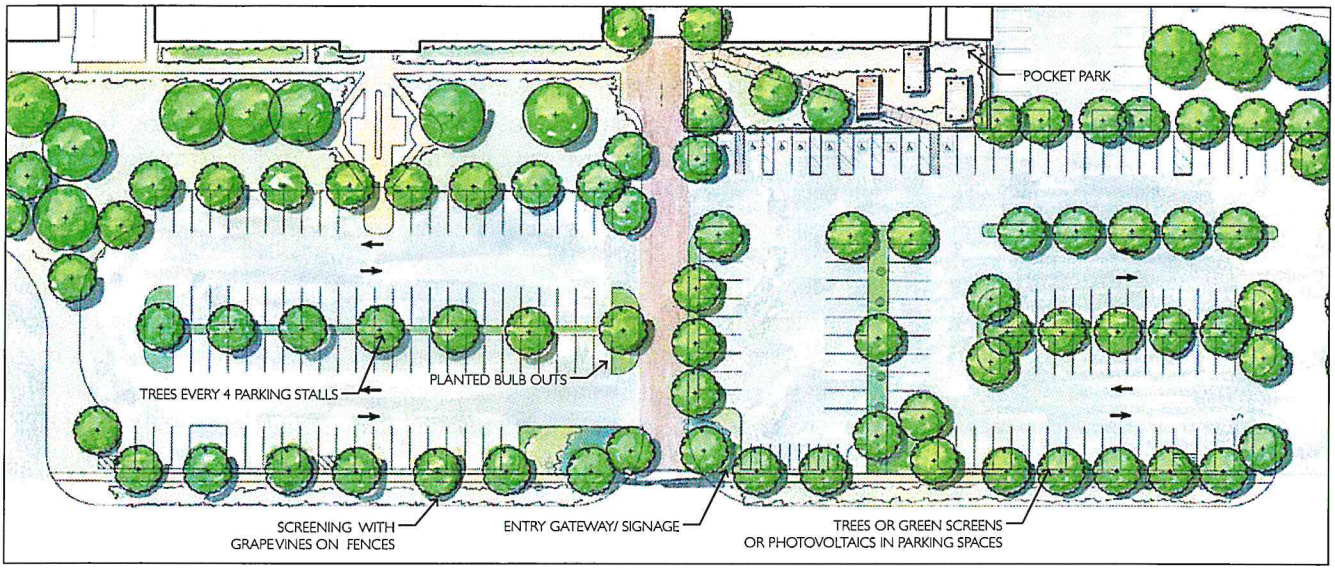
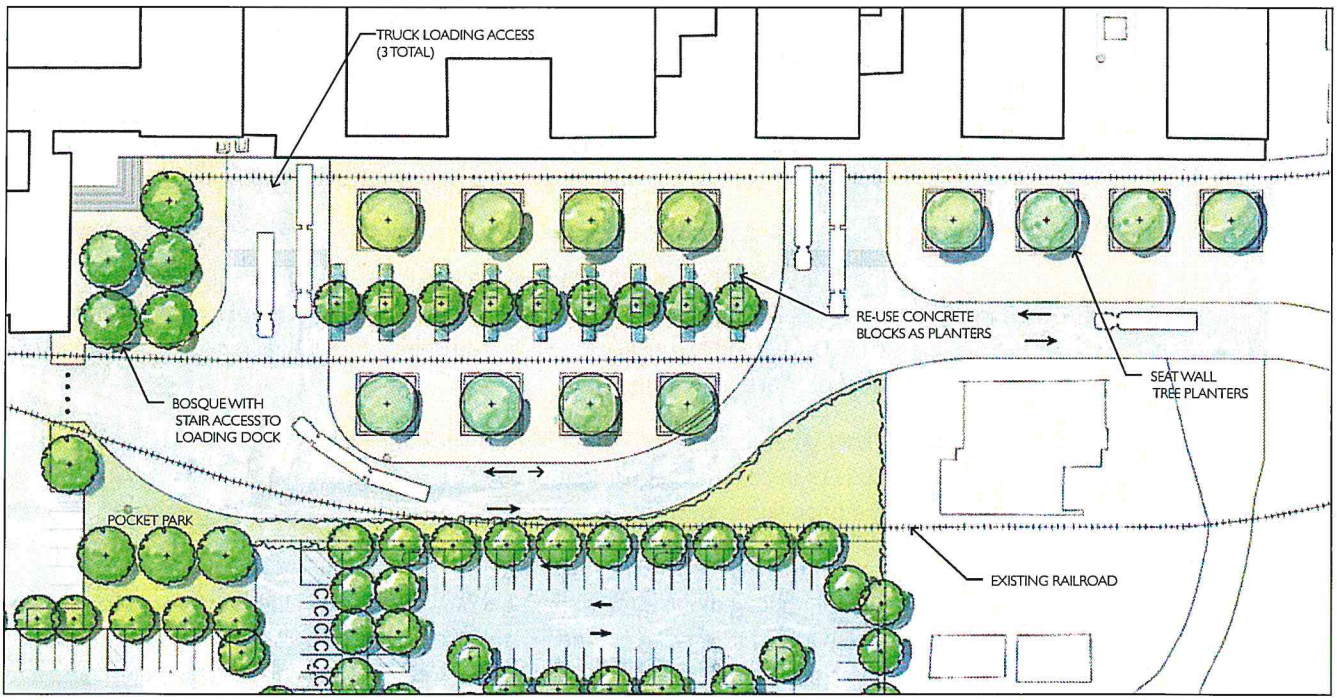


Figure 3-10c Open Space and Landscaping Concepts



5. Low Impact Development (LID)/Stormwater Management

The following principles govern LID/stormwater management at the RAAP:

» General LID Practices. LID practices are to be incorporated throughout the RAAP and required on new development in both the North and South End Caps to mitigate peak runoff flow rates, conserve and create natural areas, minimize stormwater pollutants of concern, and protect slopes and channels following the City's Model Standards & Specifications for Low Impact Development Practices.

» Site Specific LID Practices. A LID Stormwater Management for the Riverbank Army Ammunition Plant document lays out recommendations for sustainable practices at the RAAP site that support LID, including stormwater improvements as well as other measures, and that can be implemented immediately or phased in over time. Recommendations serve as a beginning point to address site-specific constraints while following the City's Model Standards & Specifications for Low Impact Development Practices.

6. New Construction or Building Modification

The following principles govern new construction and building modification at the RAAP:

» Sustainable Building Practices. The RAAP is envisioned as a green industrial park and new devel-opment is encouraged to incorporate sustainable design practices and pursue LEED, Build It Green, or other acknowledged sustainability certifications.

» LEED-ND for Project. The City is exploring certification of the overall Property under the LEED for Neighborhood Development ("LEED-ND") at the level of "Certified" or greater; there is no guarantee that certification efforts will commence.

» Other LEED certification. The City may seek certification of individual buildings within the Property, including certification of the buildings under the LEED for New Construction ("LEED-NC"), LEED for Core & Shell ("LEED-CS"), LEED for Commercial Interiors ("LEED-CI") and the LEED for Existing Buildings ("LEED-EB") rating systems at the level of "Certified" or greater.

» Other green certification. The City may seek additional sustainable building certifications or in-corporate equivalent or additional sustainability features or strategies into the operation and maintenance of the RAAP and may seek third party certification of same.

» Tenant improvements. Tenants are encouraged to seek LEED certification of the tenant spaces at their sole cost and expense; the City shall reasonably cooperate with the same provided there is no expense to the City. Tenant shall be required to adhere to certain construction and operational practices and procedures that may be necessary in order for the RAAP to comply with the City's LEED objectives. Required practices and procedures shall be set forth in the lease or development agreements.

D. Streetscape Concepts

This section describes the broad streetscape concepts recommended for the Specific Plan Area. Recommendations are provided for interior roads within the North End Cap as well as for Claus and Claribel Road, both of which border the RAAP site.

1. Interior Roads

It is recommended that interior roads in the North End Cap be designed to accommodate vehicle traffic for typical industrial uses as well as for office uses. The lane configuration will need to support heavier trucks as well as smaller trucks and automobiles, such as those driven by employees, as well as a Class III bike route. The streetscape should include a landscaped area at the outside edge of each travel lane that separates vehicular traffic from sidewalks. Trees should be planted within the buffer to provide shade, shield pedestrians from traffic, and enhance the aesthetic character of the RAAP site. All interior street frontages should provide sidewalks to ensure safe pedestrian circulation between buildings as well as for those walking to and from their places of employment. Right-of-way for interior streets will be in accordance with the City's standards and Circulation and Community and Character Design Elements.

2. Perimeter Roads

It is recommended that the western and southern project frontages, along Claribel and Claus Roads, be widened to their ultimate widths and the appropriate turn-pockets, bicycle facilities and pedestrian amenities provided. It is recommended that four 12-foot lanes be provided for primary vehicular circulation with a 2-way turn lane or possible median separating travel directions. This lane configuration will support heavier trucks as well as smaller trucks and automobiles, such as those driven by employees. The streetscape should include a planter strip/swale at the outside edge that provides a landscape buffer and a sidewalk/bike path. Trees should be planted within the buffer to provide shade, shield pedestrians from traffic, and enhance the aesthetic character of the RAAP site. Northbound right-turn lanes into the site from Claus Road should be constructed where heavy truck movements are expected to facilitate their movements into the site. Given the length of the site, over ½ mile, several potential transit stops should be included along the project frontage on both Claus and Claribel Roads. Right-of-way for perimeter roads will be in accordance with the City's standards and Circulation and Community and Character Design Elements.

Figure 3-11 Northwest Park Option



E. Additional North End Cap Concept

Figures 3-11 and 3-12 show an additional concept for development of the North End Cap area. The primary ideas shown in this concept are an alternative configuration of the interior roads within the North End Cap and the potential extension of Central Avenue along the eastern property line of the RAAP, connecting Kentucky Avenue and Claribel Road.

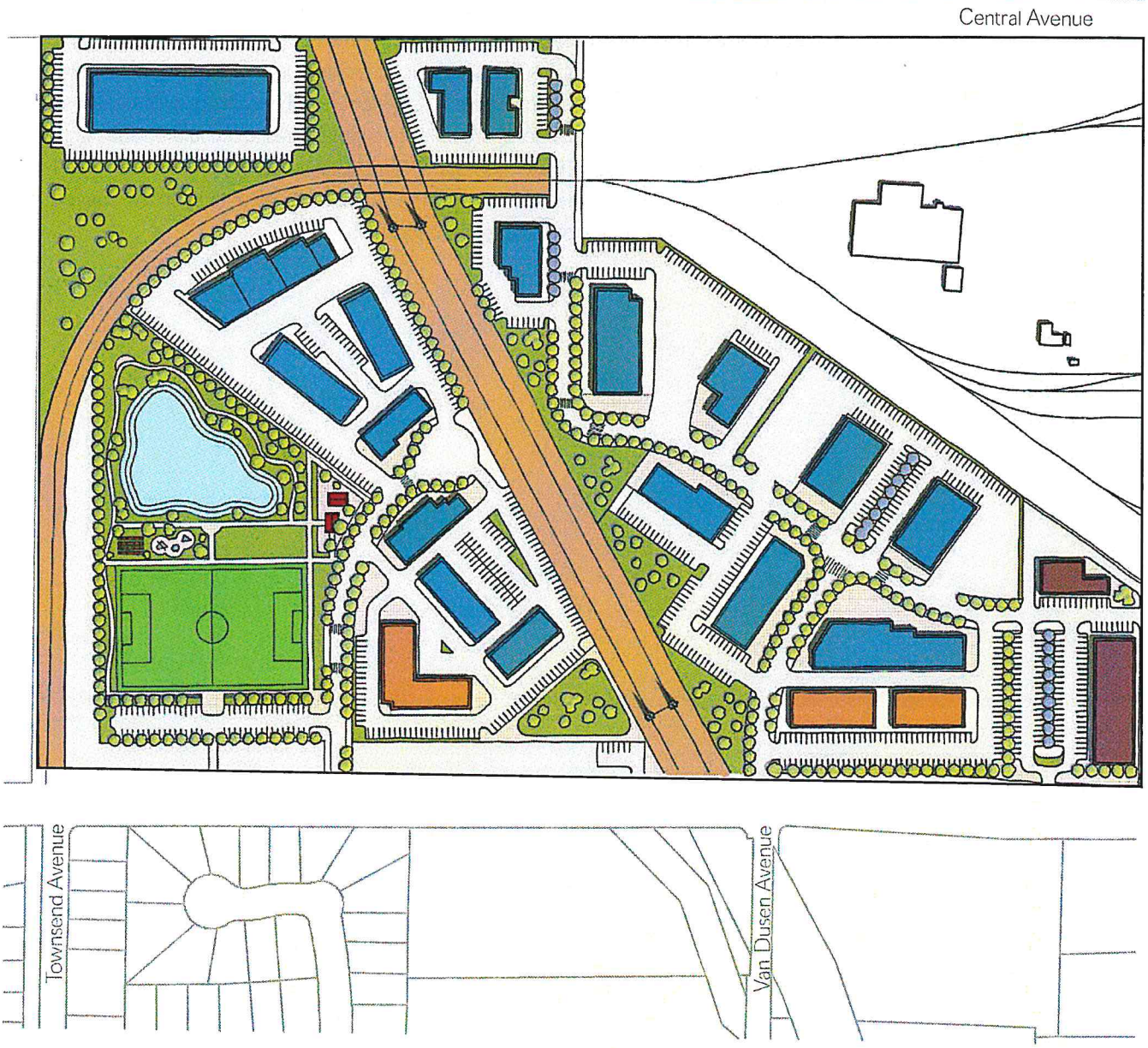
1. Interior Roadway Network

The interior road network in this concept is reconfigured to terminate in a cul-de-sac at the Hetch Hetchy Aqueduct. This would occur on the north and south sides of the easement. This option would be suitable if the San Francisco Public Utilities Commission (SFPUC) will not grant permission for a new road across the Aqueduct. However, it would result in reduced circulation within the North End Cap.

2. Northeast Development

The extension of Central Avenue gives the northeast portion of the RAAP site frontage along a new street section. As discussed as part of the land use concept above, this site is located along an anticipated Central Avenue extension and should therefore be developed with lower intensity uses. Similarly to new development along Claus Road, this would help to transition to existing agricultural uses or future residential uses expected in this area.

Figure 3-12 Additional North End Cap Concept



3. Northwest Community Park and Stormwater Pond

In this alternative, industrial uses are shown in the far northeast corner of the North End Cap and a community park and stormwater pond is shown in the northwest corner. The soccer field shown on the park in Figures 3-11 and 3-12 would function as part of the stormwater management system, carrying water down to the stormwater retention pond to the east. In addition to the soccer field, picnic facilities, lawn areas, horseshoe pits, and a trail around the stormwater pond are all envisioned in this concept. However, it should be noted that these park elements are only conceptual ideas and could be substituted for other features if desired. Figure 3-11 shows a realistic rendering of how the community park and stormwater pond could be designed. Additional information on the storm drainage needs and options are discussed in Chapter 7.

CHAPTER 4:

GOALS AND POLICIES

This chapter outlines goals and policies for the RAAP Specific Plan with respect to land use and community design, transportation and circulation, public facilities and services, cultural resources, and economic development. The goals and policies evolved from the Base Reuse Plan and Specific Plan processes. The policies implement those in the General Plan by providing clear parameters by which City staff and decision-makers can review new projects and significant additions or remodeling within the Specific Plan Area.

Goals and policies are defined as follows:

- **Goal.** A goal is a specific condition or end that represents fulfillment of the vision and concepts outlined in this Specific Plan.

A policy is a specific statement that guides decision-making as the City works to achieve a goal. Policies, once adopted, represent statements of City regulation.



A. Economic Development

Goal ED-1: New jobs at the RAAP for local residents, and especially Riverbank residents.

Policy ED-1: Market the RAAP site to regional developers, particularly those that have successfully completed other industrial/R&D projects.

Policy ED-2: Market to green businesses that need industrial, R&D, or office space.

Policy ED-3: Identify and contact companies throughout the region, State, and nation that may be looking to expand their current operations and may need the type of facilities or land offered at the RAAP.

Policy ED-4: Support existing tenants that wish to expand their current facilities, either in existing buildings or on currently undeveloped areas.

Policy ED-5: Encourage new employment uses that are consistent with the educational attainment and specialized training of Riverbank's working-age population.

Goal ED-2: An emerging industrial park and retail area that is attractive to developers.

Policy ED-6: Continue efforts to "brand" the RAAP and create materials that can be used to market the RAAP to potential developers.

Policy ED-7: Identify incentives that could increase developer interest in the RAAP.

B. Land Use and Community Design

Goal LUD-1: A land use mix that contributes to job creation for Riverbank residents.

Policy LUD-1: Encourage a mix of new employment-intensive development types on undeveloped portions of the RAAP, including traditional industrial uses, R&D space, flex space, office uses, and supporting retail space.

Goal LUD-2: A new industrial park and retail area that contributes positively to the aesthetic character of Riverbank.

Policy LUD-2: Ensure that new development follows the standards and guidelines provided in this Specific Plan.

Policy LUD-3: Ensure that new development respond appropriately to adjacent development, particularly residential neighborhoods through screening, setbacks, and other mechanisms.

Policy LUD-4: Encourage significant climate apropriate landscaping along frontages as part of private development.

Policy LUD-5: Encourage appropriate setbacks, screening, and landscaping along Claus Road, Claribel Road, and the anticipated Central Avenue extension.

Policy LUD-6: Accentuate entries to the North End Cap property and Riverbank Industrial Complex with gateway features, such as special landscaping, building accents, signage, open space, or other design features.

Goal LUD-3: A building design that maintains historic character.

Policy LUD-7: Ensure new buildings in RAAP-2 compliment the historic character of existing buildings in proportions, massing, general architectural elements, and materials insofar as these actions do not limit the functionality of subject buildings and sites.

C. Transportation and Circulation

Goal TRAN-1: A new industrial park and retail area that facilitates the safe circulation of vehicles, bicycles, and pedestrians.

Policy TRAN-1: Provide pedestrian crossings as appropriate to ensure that employees can safely walk between buildings and to areas off-site.

Policy TRAN-2: On new public streets built in the Specific Plan Area, use a landscaped planting strip to buffer sidewalks from roadways.

Policy TRAN-3: Ensure bicycles are accommodated through the provision of on-site bicycle parking.

Policy TRAN-4: Design roadways to accommodate all modes of travel safely.

Policy TRAN-5: Where appropriate, encourage shared access drives between separate developments.

Goal TRAN-2: Retail and industrial uses that provide adequate parking for local residents and visitors.

Policy TRAN-6: Require on-site parking for individual developments.

Policy TRAN-7: Where appropriate, encourage shared parking between developments.

Goal TRAN-3: An industrial park that provides for safe queuing of delivery vehicles.

Policy TRAN-8: Ensure that truck deliveries and movement do not inhibit pedestrian, bicycle, and vehicular circulation.

Policy TRAN-9: Ensure that ample room and circulation is provided in roadway and circulation design so as to maximize accessibility for new tenants.

D. Public Facilities and Services

Goal PUB-1: Adequate facilities that serve the needs of new development.

Policy PUB-1: Invest in new "backbone" infrastructure on the North and South End Cap properties to attract new development at the RAAP.

Policy PUB-2: Ensure that adequate infrastructure is provided as necessary to support new development.

Policy PUB-3: Coordinate with Stanislaus Consolidated Fire Protection District to ensure fair share development fees for future development resulting from implementation of the RAAP Specific Plan to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate.

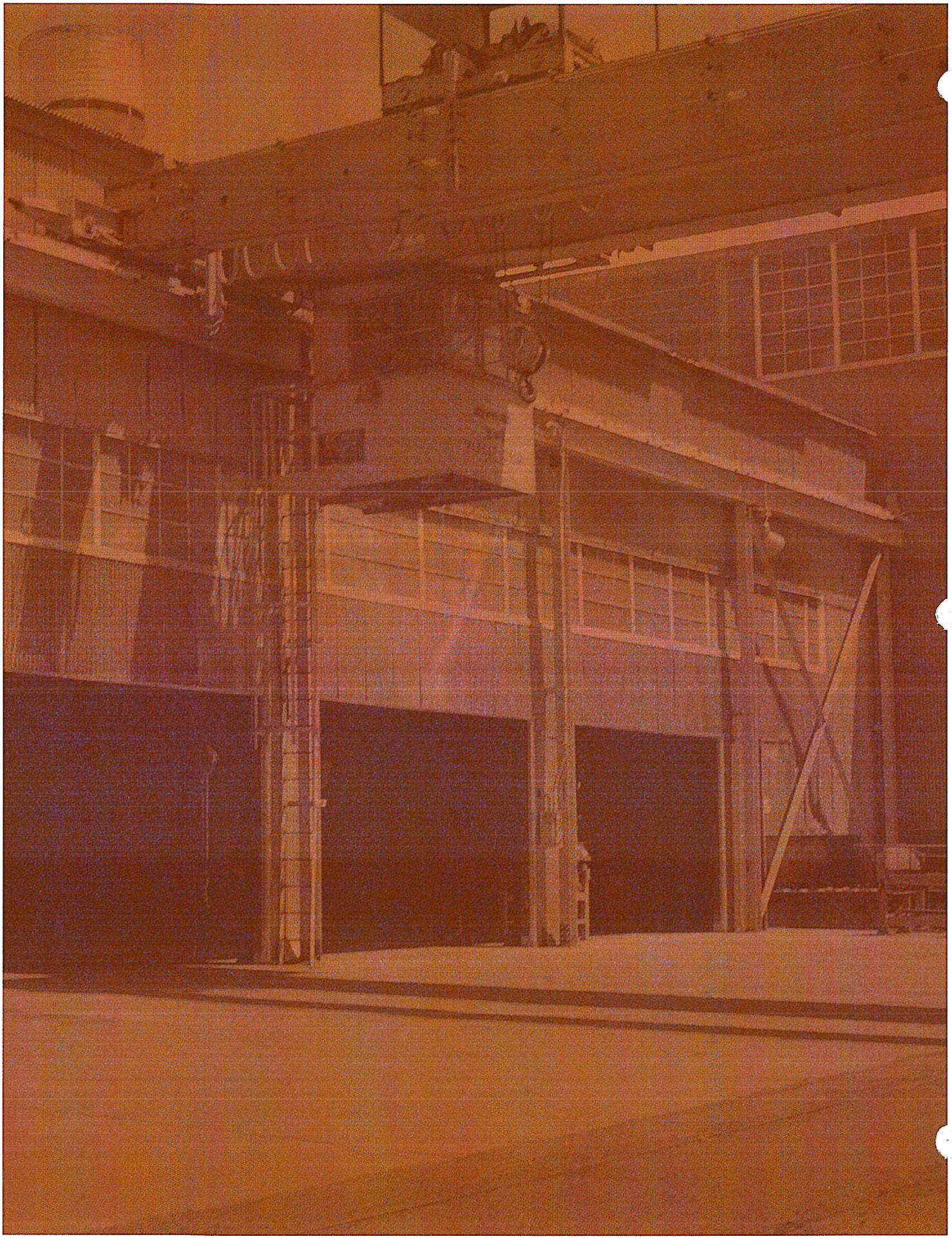
Goal PUB-2: Sustainable infrastructure that exhibits principles of low-impact development (LID).

Policy PUB-4: Require developers to implement "green" infrastructure where practical, such as on-site stormwater management, water reclamation, permeable surfaces, solar and clean energy, and other appropriate technologies.

CHAPTER 5:

LAND USE DESIGNATIONS AND DEVELOPMENT STANDARDS

This chapter provides the land use designations and development standards for the RAAP site. Land use designations support the goals of the General Plan and this Specific Plan by prescribing general uses and building intensities for different areas of the RAAP site. The RAAP has been assigned with land use designations from the existing General Plan, with only certain portions of the site changing designation. Development standards implement the goals of the General Plan and this Specific Plan by providing requirements for the physical form of future development and significant redevelopment.



A. Land Use Designations

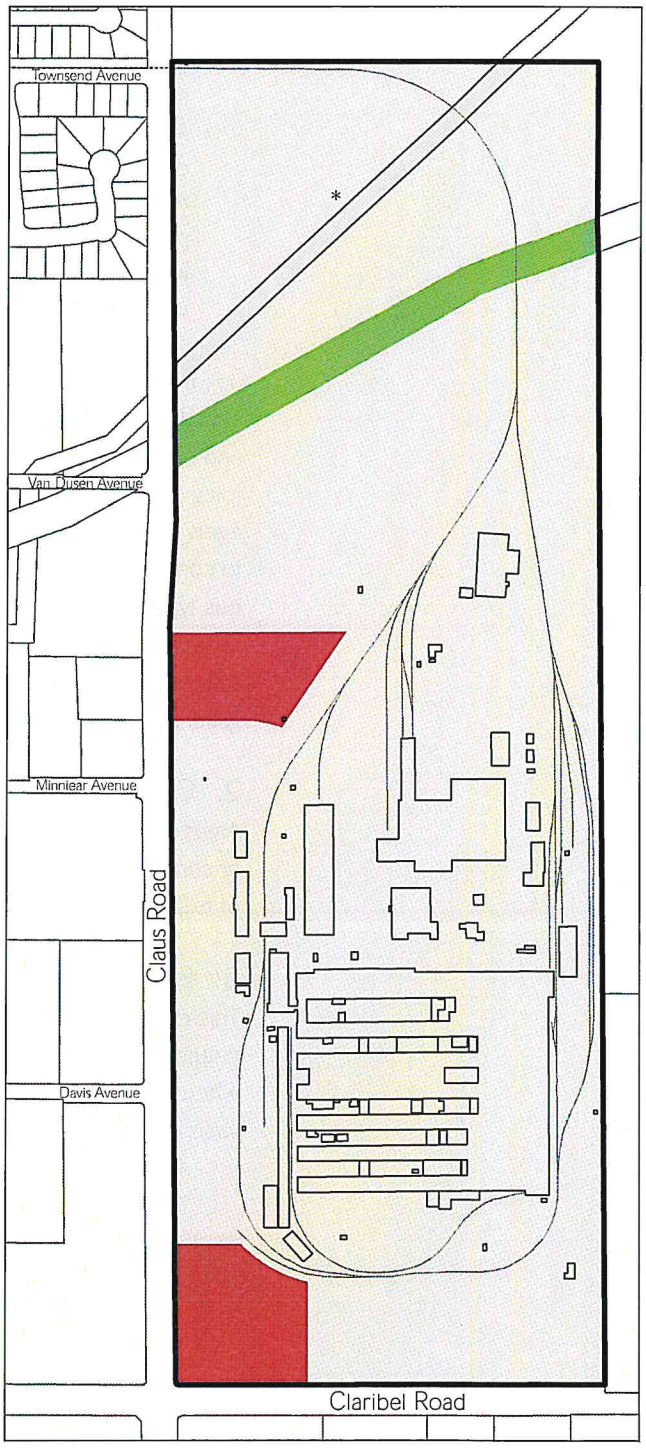
The following General Plan land use designations are based on the Base Reuse Concept and will apply within the Specific Plan Area. Figure 5-1 shows the land use designations for the Specific Plan Area.

These Land Use Designations and Development Standards replace existing zoning policies, development standards and design guidelines. These Land Use Designations and Development Standards do not replace or augment current City of Riverbank regulations pertaining to health, safety and welfare issues. All applications for new construction, or substantial modifications to existing development, shall be reviewed for conformance with the policies contained in this Plan's Land Use Designations and Development Standards.

Existing land uses that are not consistent with the regulations associated with these land use designations are permitted to continue as legal nonconforming uses consistent with the limitations of the Riverbank Municipal Code. These limitations include but are not limited to the following:

- If the nonconforming use ceases for a continuous period of six months it shall be considered abandoned and use of the building or land shall adhere with the current regulations for the RAAP.
- If the nonconforming use expands in area or the expansion modifies the business to include new uses, the nonconforming status is forfeited.

Figure 5-1 Land Use Designations



* OID canal may be relocated without further amendment of the General Plan.

» Ordinary maintenance and repairs may be made to any nonconforming building provided no structural alterations are made and providing that such work does not exceed 15% of the appraised value in any one-year period. Other repairs or alterations may be permitted provided that a use permit shall first be secured in each case.
» A nonconforming building damaged or destroyed by fire, explosion, earthquake or other act to an extent of more than 75% of the appraised value thereof, according to either the assessor's records or an appraisal performed by a qualified real estate appraiser may be restored only if made to conform to all the regulations of the district in which it is located, provided that such building may be restored to a floor area not exceeding that of the former building if a use permit first shall be secured.

1. Industrial/Business Park (I/BP).

This designation includes manufacturing uses, as well as a mixture of light manufacturing and office spaces. These uses may be located in campus-like settings sometimes referred to as "business parks" or "research parks," or as more traditional industrial parks. This category is meant to accommodate a variety of employment-generating, basic (as opposed to community serving) enterprises. Office parks could accommodate businesses of various types, research and development, logistics services, and other uses. Areas with this designation near existing or future planned residential and other sensitive land uses are subject to performance standards to ensure against noise, traffic, safety, light spillage and glare, and other impacts typically generalized as "compatibility."

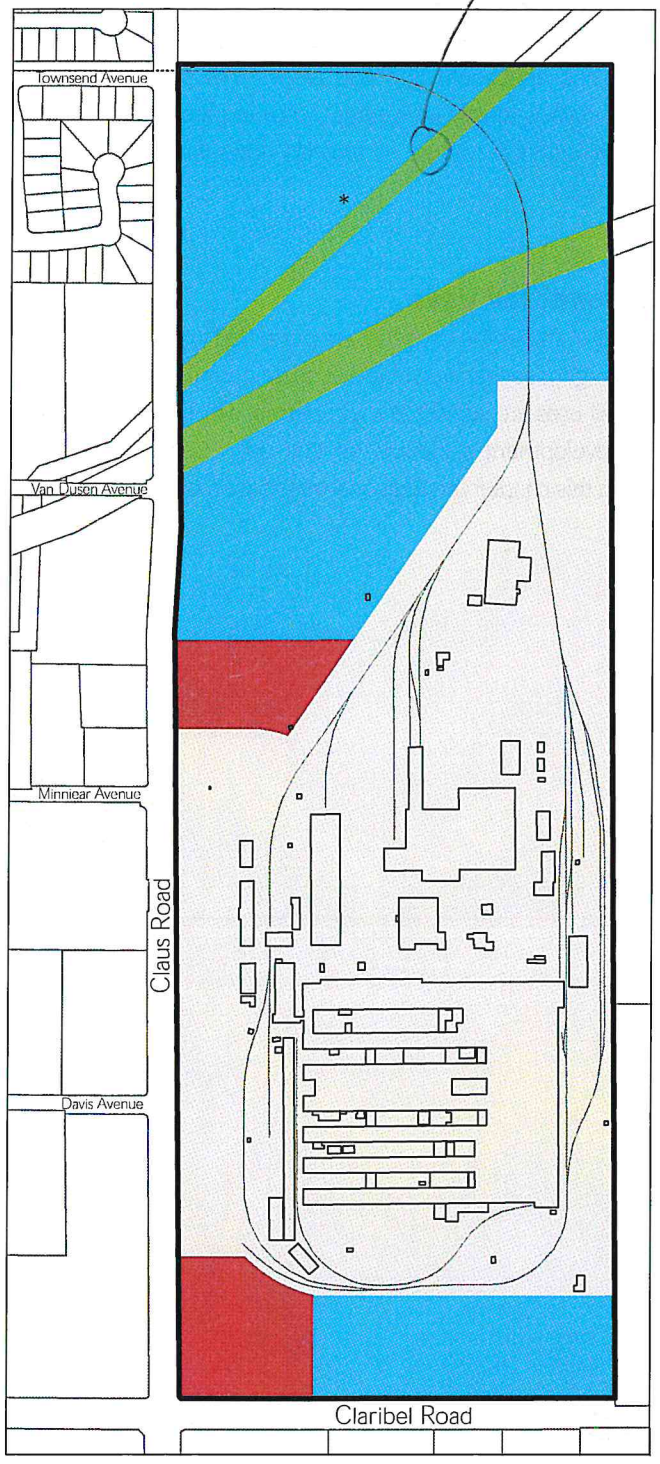
2. Community Commercial (CC)

Areas with this designation are anticipated to be developed for retail, employment, and/or commercial services. These areas are located along major roadways on the periphery of existing and planned neighborhoods. The maximum FAR is 0.3.

3. Buffer/Greenway/Open Space (B/G/OS)

This designation provides the opportunity to preserve important open spaces containing natural resources, such as sensitive biological habitat. This category also includes areas where buffering is necessary between different land uses. Bicycle and pedestrian pathways are also accommodated by this Land Use Designation.

Figure 5-2 RAAP Zoning Areas



B. RAAP Zoning Areas

Figure 5-2 shows the zoning areas that apply to the RAAP. These areas are discussed in more detail in the development standards for each area.

Figure 5-3 Conceptual Parcelization



C. Conceptual Parcelization

Figure 5-3 shows a conceptual plan for parcelization of the North End and South End Cap areas. The parcel configuration shown is strictly conceptual. Actual parcelization will be determined in the future as projects occur within the Specific Plan Area.

D. Permitted Uses

Table 5-1 shows the uses that are permitted in each RAAP area, including those that are subject to a use permit. In the RAAP-OS area, all uses are subject to a use permit, which shall determine the development standards for that use. See H. Definitions later in this chapter for additional information on land use types.

Table 5-1 Allowed Uses in RAAP Areas

Land Use	RAAP Industrial/R&D (RAAP-1)	RAAP General Industrial (RAAP-2)	RAAP Retail (RAAP-R)
Commercial			
Bank, Retail	–	–	P
Business Support Service	UP	–	P
Car Wash	–	–	P**
Equipment Sales and Rental	UP	–	UP
Food and Beverage Sales–10,000 square feet or less	–	UP	P
Food and Beverage Sales–Over 10,000 square feet	–	–	–
Gas and Service Station	–	–	UP
Health/Fitness Facility	–	–	UP
Medical Clinic or Lab	–	P*	–
Office	P	P	–
Outdoor Storage	UP	P*	UP
Personal Services–Low Impact	–	–	P
Personal Services– Moderate Impact	–	–	–
Restaurant or Café–Full Service	–	–	UP
Restaurant or Café–Quick Service	–	P**	P
Retail, General	–	–	P
Secondhand Store	–	–	UP
Shopping Center	–	–	UP
Temporary Use	UP	UP	UP
Trade or Vocational School–Private	P	P	–
Trade or Vocational School–Public	–	P	–
Truck Wash	–	P**	–

* Allowed if screened from view from a public right-of-way.

** Allowed only as an accessory use.

P	permitted
UP	requires use permit
-	not permitted

Table 5-1 Allowed Uses in RAAP Areas (Continued)

Land Use	RAAP Industrial/R&D (RAAP-1)	RAAP General Industrial (RAAP-2)	RAAP Retail (RAAP-R)
Industrial/Research and Development			
Agricultural Support Services	P	–	–
Fertilizer Manufacturing	P	–	–
Food Trucks	P***	P***	–
Food Truck Plaza	–	P***	–
Green Energy Plant	UP	P	–
Maintenance and Repair Service	UP	–	–
Manufacturing and Processing–General	P	P	–
Manufacturing and Processing–Heavy	UP	P	–
Manufacturing and Processing–Light	P	P	UP
Recycling Facility–Large	UP	P	–
Recycling Facility–Small	–	–	P
Research Laboratory	UP	P	–
Reverse Vending Machine–Bulk	–	–	–
Reverse Vending Machine–Small	–	–	P
Vehicle Service and Repair	–	P*	–
Warehousing, Wholesaling, and Distribution	UP	UP	–
Transportation, Communications, and Utilities			
Cell Tower	UP	UP	UP
Freight Terminal	–	UP	–
Natural Gas Fuel Station	P	–	–
Public or Quasi-Public Facility	UP	UP	UP
Public Utilities–Major	–	UP	–
Public Utilities–Minor	P	P	P

* Allowed if screened from view from a public right-of-way.

** Allowed only as an accessory use.

*** Allowed with conditions.

P	permitted
UP	requires use permit
-	not permitted

E. RAAP Light Industrial/R&D (RAAP-1) Development Standards

The following standards shall be applied for all areas zoned RAAP-1, as shown in Figure 5-4.

1. Purpose and Intent

The purpose of this area is to provide for the development of light manufacturing and R&D uses at the RAAP site.

2. Maximum Building Height: 55 feet

3. Maximum Area: Sufficient to provide minimum yard, landscaping, and parking requirements.

4. Minimum Site Dimensions

a. Width (Interior Lot): 55 feet
b. Width (Exterior Lot): 65 feet
c. Depth: 100 feet

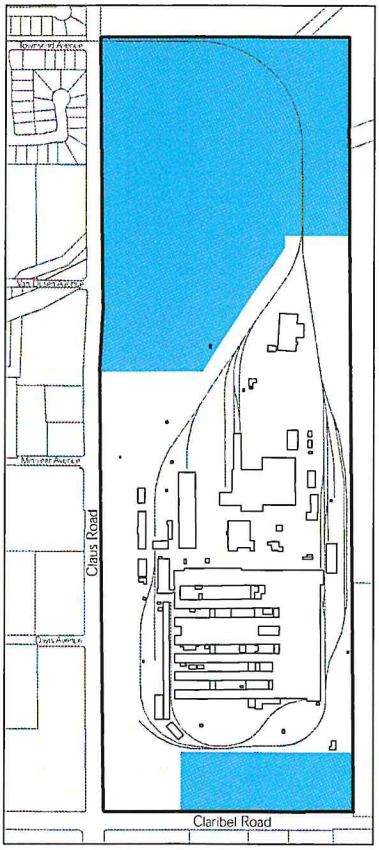
5. Minimum Setbacks

a. Front or side yard of a corner lot: 10 feet
b. Front: 0 feet
c. Side: 0 feet
d. Back: 0 feet

6. Parking Requirements

a. Offices: 1 space per 300 square feet gross floor area
b. Industrial Uses (except those listed below): Per Municipal Code OR conduct a parking study or consult with the Community Development Director to demonstrate reduced needs
c. Warehousing: Per Municipal Code OR conduct a parking study or consult with the Community Development Director to demonstrate reduced needs
d. Transportation, Communication and Utilities: Determined by use permit, or through site plan review if a use permit is not required
e. ADA: 1 space for every 40 total parking spaces; after 600 total parking spaces, provide 1 space for each 200 spaces thereafter; or as required by the California Building Code.
f. Electric Car: 1 space per 100 public parking spaces.

Figure 5-4 RAAP-1



7. Accessory Structures
   a. With the exception of structures manned for security purposes, accessory structures shall not be located in the front setback of new development.
   b. Accessory structures shall be screened from view of public rights-of-way.
   c. Accessory structures shall be located so as not to inhibit or conflict with vehicular circulation within a given development.

8. Landscaping
   a. On sites where soil contamination precludes excavation for planting beds and tree wells, the landscaping requirements of this section may be modified through the site plan review process.
   b. A minimum of 15 percent of each site's area shall be landscaped. In addition, a minimum of five percent of the surface of each parking lot shall be landscaped.
   c. Landscaping will meet Model Water Efficient Landscape Ordinance (WELO) requirements.
   d. For every eight parking stalls, one shade tree shall be provided in the paved area. Shade trees shall be a minimum 24-inch box in size and shall be selected from a City-approved list of canopy tree species.
   e. Parking areas along public rights-of-ways shall including landscape plantings at their edges. Landscaping shall allow views into the site.

9. Signage
   a. Only wall signs and monument signs shall be permitted. Freestanding signs other than monument signs shall not be permitted.
   b. One monument sign shall be permitted for each parcel of the site. Each monument sign shall be limited to 10 feet in height and 85 square feet per sign face. Monument signs shall be set back at least 5 feet from any right-of-way or lot line.
   c. Individual wall signs shall be limited to 85 square feet.
   d. Signs, if lit, shall be externally illuminated.
   e. Tenant identification signs shall be located near entries to the building and shall be in scale with the design of the building and entryway.

10. Bicycle Parking
   a. New development shall provide two bicycle parking spaces, or five percent of the vehicle parking spaces, whichever is greater. Where the application of this standard would result in a fractional number of spaces, the required number of spaces shall be rounded up to the next whole number.
   b. Each bicycle parking space shall provide a securely-anchored, stationary parking device that is adequate to lock and secure a 6-foot-long bicycle.

c. All bicycle parking spaces shall be located within 50 feet of the main entrance to the building they serve. For outdoor parking areas, pedestrian walkways shall be provided between the bicycle parking spaces and the nearest building entrance.

11. Vehicle and Loading Access.
   a. Vehicle openings of buildings shall be set back a minimum of 20 feet from the property line or planned right-of-way line that the opening faces.
   b. Loading docks shall be designed so that all maneuvering, loading, and unloading takes place off-street.

12. Excavation
   a. All excavation will be per Municipal Code.

F. RAAP General Industrial (RAAP-2) Development Standards

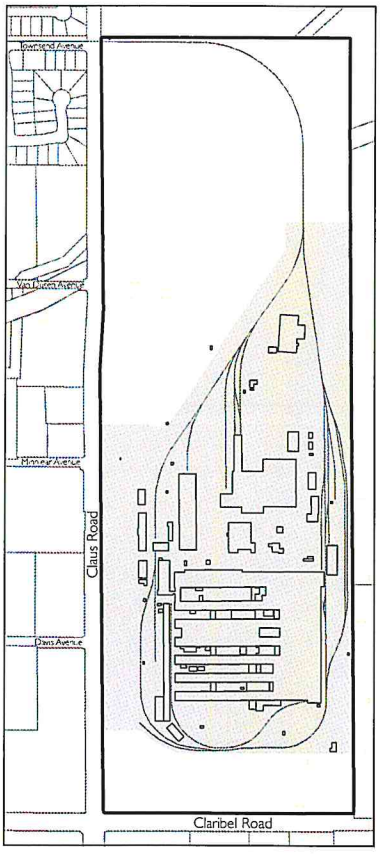
The following standards shall be applied for all areas zoned RAAP-2, as shown in Figure 5-5.

1. Maximum Building Height: 70 feet

2. Minimum Setbacks
   a. Front (Claus Road frontage): 20 feet
   b. Front (Central Avenue Extension frontage): 50 feet
   c. Front, side and back (internal roads): 0 feet

3. Parking Requirements
   a. Offices: 1 space per 300 square feet gross floor area
   b. Industrial Uses (except those listed below): Per Municipal Code OR conduct a parking study or consult with the Community Development Director to demonstrate reduced needs
   c. Warehousing: Per Municipal Code OR conduct a parking study or consult with the Community Development Director to demonstrate reduced needs
   d. Transportation, Communication and Utilities: Determined by use permit, or through site plan review if a use permit is not required
   e. ADA: 1 space for every 40 total parking spaces; after 600 total parking spaces, provide 1 space for each 200 spaces thereafter; or as required by the California Building Code.
   f. Electric Car: Encourage existing tenants to provide electric car hookups and parking within existing parking; expansion of existing parking would require 1 space per 100 public parking spaces.

Figure 5-5 RAAP-2



4. Accessory Structures
   a. With the exception of structures manned for security purposes, accessory structures shall not be located in the front setback of new development.
   b. Accessory structures shall be screened from view of public rights-of-way.
   c. Accessory structures shall be located so as not to inhibit or conflict with vehicular circulation within a given development.

5. Landscaping
   a. On sites where soil contamination precludes excavation for planting beds and tree wells, the landscaping requirements of this section may be modified through the site plan review process.
   b. Landscaping will meet Model Water Efficient Landscape Ordinance (WELO) requirements.

6. Signage
   a. Interior signs not visible from Claus or Claribel Roads are exempt.
   b. Center signs identifying multiple tenants shall be at least 150 feet apart and no more than 50 feet high.
   c. Wall-mounted signs on buildings visible from Claus or Claribel Roads are permitted if using channelized letters in sizes as allowed in the Riverbank Municipal Code.

7. Bicycle Parking
   a. New development shall provide two bicycle parking spaces, or five percent of the vehicle parking spaces, whichever is greater. Where the application of this standard would result in a fractional number of spaces, the required number of spaces shall be rounded up to the next whole number.
   b. Each bicycle parking space shall provide a securely-anchored, stationary parking device that is adequate to lock and secure a 6-foot-long bicycle.
   c. All bicycle parking spaces shall be located within 50 feet of the main entrance to the building they serve. For outdoor parking areas, pedestrian walkways shall be provided between the bicycle parking spaces and the nearest building entrance.

8. Vehicle and Loading Access
   a. Vehicle openings of buildings shall be set back a minimum of 20 feet from the property line or planned right-of-way line that the opening faces.
   b. Loading docks shall be designed so that all maneuvering, loading, and unloading takes place off-street.

9. Excavation
   a. All excavation will be consistent with deed restrictions and otherwise per Municipal Code.

G. RAAP Retail (RAAP-R) Development Standards

The following standards shall be applied for all areas zoned RAAP-R, as shown in Figure 5-6.

1. Maximum Building Height: 30 feet

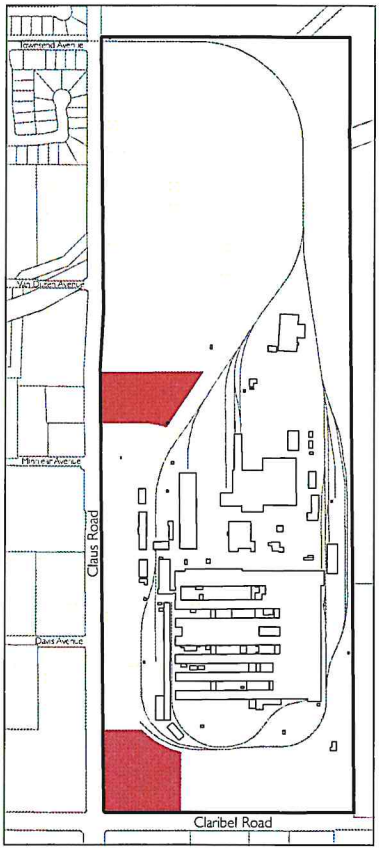
2. Minimum Site Dimensions
   a. Width (Interior Lot): 55 feet
   b. Width (Exterior Lot): 65 feet
   c. Depth: 100 feet

3. Minimum Setbacks
   a. Front: 10 feet
   b. Side: 10 feet
   c. Back: 10 feet

4. Parking Requirements
   a. Commercial Uses (except those listed below): 1 space per 300 square feet gross floor area
   b. Banks: 1 space per 500 square feet gross floor area
   c. Offices: 1 space per 300 square feet gross floor area
   d. Transportation, Communication and Utilities: Determined by use permit, or through site plan review if a use permit is not required
   e. ADA: 1 space for every 40 total parking spaces; after 600 total parking spaces, provide 1 space for each 200 spaces thereafter; or as required by the California Building Code.

5. Landscaping
   a. On sites where soil contamination precludes excavation for planting beds and tree wells, the landscaping requirements of this section may be modified through the site plan review process.
   b. A minimum of 15 percent of each site's area shall be landscaped. In addition, a minimum of five percent of the surface of each parking lot shall be landscaped.

Figure 5-6 RAAP-R



c. Landscaping will meet Model Water Efficient Landscape Ordinance (WELO) requirements.
d. For every eight parking stalls, one shade tree shall be provided in the paved area. Shade trees shall be a minimum 24-inch box in size and shall be selected from a City-approved list of canopy tree species.
e. Parking areas along public rights-of-ways shall including landscape plantings at their edges. Landscaping shall allow views into the site.

6. Signage

a. Only wall signs and monument signs shall be permitted. Freestanding signs other than monument signs shall not be permitted.
b. One monument sign shall be permitted for each parcel of the site. Each monument sign shall be limited to 10 feet in height and 85 square feet per sign face. Monument signs shall be set back at least 5 feet from any right-of-way or lot line.
c. Wall signs shall be limited to 85 square feet.
d. Individual signs, if lit, shall be externally illuminated.
e. Tenant identification signs shall be located near entries to the building and shall be in scale with the design of the building and entryway.

7. Bicycle Parking

a. New development shall provide two bicycle parking spaces, or five percent of the vehicle parking spaces, whichever is greater. Where the application of this standard would result in a fractional number of spaces, the required number of spaces shall be rounded up to the next whole number.
b. Each bicycle parking space shall provide a securely-anchored, stationary parking device that is adequate to lock and secure a 6-foot-long bicycle.
c. All bicycle parking spaces shall be located within 50 feet of the main entrance to the building they serve. For outdoor parking areas, pedestrian walkways shall be provided between the bicycle parking spaces and the nearest building entrance.

8. Vehicle and Loading Access

a. Vehicle openings of buildings shall be set back a minimum of 20 feet from the property line or planned right-of-way line that the opening faces.
b. Loading docks shall be located where trucks can head in and head out of the loading dock. Loading docks shall be designed so that all maneuvering, loading, and unloading takes place off-street.

9. Excavation

a. All excavation will be per Municipal Code.

H. Definitions

AGRICULTURAL SUPPORT SERVICES. A establishment directly related to agriculture and intended to facilitate the production, marketing and distribution of agricultural products including retail and service establishments. Does not include farm-based business.

BANK, RETAIL. A financial institution such as a bank, credit agency, or lending institution that serves walk-in customers. Does not include check cashing stores, which are considered a "moderate-impact personal service."

BUSINESS SUPPORT SERVICE. An establishment that provides services that are necessary to other businesses, such as blueprinting, computer rental and repair, copying, mailing and mailbox services, messenger services, and temporary employment.

CAR WASH. A permanent, self-service or full-service establishment that provides facilities for washing vehicles with no more than two axles.

CELL TOWER. A wireless transmission and reception facility for a telephone and/or data network. Includes all associated antennas, supporting structures, enclosures or cabinets housing associated equipment, cables, and other accessory development.

EQUIPMENT SALES AND RENTAL. An establishment that sells or rents large construction equipment, such as bulldozers, ditch diggers, tractors, industrial generators, water tankers, or similar items.

FERTILIZER MANUFACTURING. A retail establishment directly related to the manufacture and distribution of fertilizer. Fertilizer product could be plant- or animal-derived agricultural growth-inducing products such as compost teas and guano, or manufactured (synthetic) fertilizers or pesticides (including herbicides, insecticides and fungicides), or other plant growth regulators.

FOOD AND BEVERAGE SALES. A retail establishment in which the majority of the floor area open to the public is occupied by food products or non-alcoholic beverages that are packaged for consumption away from the store. Includes convenience markets that sell a range of merchandise, including household items, newspapers and magazines, incidental to food and beverage sales. Does not include the sale of alcoholic beverages, which is not permitted.

FOOD TRUCK. A retail establishment located in a vehicle that prepares and sells food; also referred to as a mobile kitchen, mobile canteen, or catering truck. The majority of the square footage of vehicle is occupied by food preparation equipment and space to operate equipment, food products or non-alcoholic beverages that are prepared and packaged for consumption away from the vehicle. Does not include the sale of alcoholic beverages, which is not permitted. Trucks are limited to 2-hours on site per day. Vehicle-mounted generators are allowed. The only associated parking is for the food truck vehicle itself which is limited to available on-site parking; no parking is associated with food trucks as customers are intended to be employees within walking distance of the food truck. Trucks will need to have a business license with the City of Riverbank.

FOOD TRUCK PLAZA. An area set aside for multiple food trucks to gather on a temporary basis. Electrical hook-up and seatting may or may not be provided. Plaza use is limited to no more than five food trucks at a time between the hours of 10:00 am to 2:00 p.m. on non-holiday weekdays; food trucks are not allowed during other hours or in higher numbers unless by written permission from the Community Development Director.

FREIGHT TERMINAL. A rail facility used for the loading and unloading of freight from rail cars. A freight terminal may also include a "team track" facility for transferring freight from rail cars to trucks.

GAS AND SERVICE STATIONS. An establishment used primarily for the retail sale and dispensing of motor fuels, lubricants, and motor vehicle accessories, and the rendering of services and minor repairs to vehicles, not including painting, body work or fender work. A gas station may include "food and beverage sales" and a car wash as accessory uses.

GENERAL RETAIL. See "Retail, general."

GREEN ENERGY PLANT. A facility that uses renewable materials to produce electrical power. "Renewable materials" may include waste material, such as manure and grain stubble, from normal agricultural operations. "Renewable materials" shall not include waste material from non-agricultural uses, or any coal or petroleum product.

HEALTH/FITNESS FACILITY. A fitness center, gymnasium, or health and athletic club, which may include any of the following: free weights; a swimming area, sauna, spa or hot tub facilities; indoor tennis, handball, racquetball, and other indoor sport activities. Does not include archery or shooting ranges, which are not permitted.

MAINTENANCE AND REPAIR SERVICE. An establishment that provides off-site maintenance or repair services at a client's premises, including heating, ventilation and air conditioning (HVAC) repair; heavy equipment and appliance repair; janitorial services; pest control; and plumbing. Includes services for both commercial and domestic purposes. These services are considered an accessory use when they are offered as part of a retail establishment that sells the products being maintained or repaired.

MANUFACTURING AND PROCESSING. The conversion of raw materials or assembly of parts into new products that are primarily sold off-site. Also includes storage and distribution of the goods that are manufactured and processed.

MANUFACTURING AND PROCESSING—GENERAL. A facility for manufacturing and processing activities where the scale of operations is greater than "manufacturing and processing—light," but where impacts on surrounding land uses can customarily be mitigated to acceptable levels. Includes clay products manufacturing; metal fabrication and machine welding shops; stone product assembly and fabrication; and wood assembly and woodworking.

MANUFACTURING AND PROCESSING—HEAVY. A facility for manufacturing and processing activities that may need to be significantly isolated from surrounding land uses through setbacks, screening, or other methods in order to avoid unacceptable impacts on its surroundings. Includes heavy machinery manufacturing; large-scale metal coating; large-scale metal pressing and extruding; and other uses that generate significant amounts of air emissions, noise, odors, vibration, or similar impacts.

MANUFACTURING AND PROCESSING—LIGHT. A facility for manufacturing and processing activities that are unlikely to cause impacts on surrounding uses. Includes the following:

1. Artisanal and hand-craft manufacturing. Includes establishments that manufacture artisanal goods or other durable consumer goods by hand or on a small scale, including ceramics and pottery, jewelry, small glass and metal art and craft products, sporting and athletic goods, taxidermy, and toys.

2. Clothing and fabric products. Includes establishments that produce clothing, draperies, textiles, and other products related to the fabrication and assembly of cloth.

3. Electronics and appliance manufacturing. Includes establishments that assemble small-scale electrically powered equipment and fabricate small parts for this equipment, including the assembly of computers, medical devices and small appliances.

4. Food and beverage products. Includes establishments that produce or process foods and beverages for human consumption and primarily for wholesale or distribution purposes, including wholesale bakeries, breweries, butcher shops, candy manufacturing, catering services separate from stores or restaurants, coffee roasting, dairy products manufacturing, frozen food locker rental, and ice production.

5. Photo/film processing lab. Includes establishments that use chemical processes to develop photographic negative film or produce transparencies or prints in large volumes for professional and commercial use. Does not include small-scale processing equipment as an accessory use for a retail business.

6. Printing and publishing. Includes establishments that assemble or produce printed copies by use of letterpress, lithography, screen press, or xerographic copying. Does not include engravers, newspaper presses, offset presses and similar types of presses, which are considered "manufacturing and processing—general." Does not include consumer-oriented copy shops, which are considered "business support services."

MEDICAL CLINIC OR LAB. A facility that provides medical, dental, mental health, surgical and other personal health services for outpatients on a walk-in basis, including urgent care facilities, as well as medical laboratories that perform X-rays and conduct testing of specimens from walk-in patients. Does not include hospitals or other facilities that provide more intensive emergency or inpatient care.

MONUMENT SIGN. A detached sign that is placed on the ground on a foundation or load-bearing surface and is not supported by poles, braces or similar structures.

NATURAL GAS FUEL STATION. An establishment used primarily for the retail sale and dispensing of natural gas. Does not include service station, car wash, convenience markets, painting or other body work, or good and beverage sales.

OFFICE. A place of employment occupied by businesses that provide professional services. Includes accountants, architects, call centers, engineers, graphic designers, insurance agents, lawyers, photographers, and real estate agents. Does not include any facility providing medical care or engaging in the care or sales of animals. Does not include any separately defined use, including "personal services" and "retail banks."

OUTDOOR STORAGE. The keeping of any materials, including parts and finished products, outside of an enclosed building. "Outdoor storage" shall include the storage of company-operated vehicles other than passenger vehicles.

PERSONAL SERVICES. An establishment other than a "professional office" that provides services to individuals as a primary use, and that may sell products related to these services as an accessory use.

PERSONAL SERVICES—LOW IMPACT. A personal services establishment that tends to create minimal adverse impacts for its surroundings, including but not limited to barber shops and beauty salons, clothing rental, dry cleaning services with no on-site dry-cleaning equipment, home electronics repair, laundromats, and massage salons and spas. Does not include adult entertainment businesses, which are not permitted.

PERSONAL SERVICES—MODERATE IMPACT. A personal services establishment that may tend to attract criminal activity or reduce property values when found near similar establishments, and that may need to be dispersed in order to reduce these potential negative impacts. Includes check-cashing stores, hookah bars, pawnshops, psychics, and tattoo or body piercing parlors.

PUBLIC OR QUASI-PUBLIC FACILITY. Any facility owned and operated by the City, county, State or federal government, or by a public agency, regardless of the use. Any use that is listed as an allowed use for a given area may be provided as a public or quasi-public facility, even if the area does not list "public or quasi-public facility" as an allowed use. Additional uses may include stormdrain ponds, open space, public plazas, athletic fields, trails and walking paths, and dog parks; does not include playgrounds and play equipment.

PUBLIC UTILITIES—MAJOR. Any large-scale facility or equipment that is part of a public utility system, including electrical substations and switching stations, natural gas regulating and distribution facilities, public water system wells, and treatment plants.

PUBLIC UTILITIES—MINOR. Any small-scale facility or equipment used for the local distribution of public utilities, including transmission points, junction boxes and vaults, and other small structures.

RECYCLING FACILITY—LARGE. An establishment where bulk quantities of recyclable materials, including metal, paper, plastic, and oil, are collected or processed.

RECYCLING FACILITY—SMALL. A center for the collection of recyclable materials. Does not include storage containers located on the premises of a commercial or manufacturing use and used solely for the recycling of material generated by that business or manufacturer. Does not include "reverse vending machines."

RESEARCH LABORATORY. A facility for scientific research, including pharmaceutical, chemical, and biotechnology research, or the design, development and testing of electrical, electronic, magnetic, optical, computer, or telecommunications components.

RESTAURANT OR CAFÉ—FULL SERVICE. An establishment that prepares and serves food or beverages for immediate consumption, primarily on the premises; where food is prepared after a customer places an order; where table service is provided; and where payment is required after consumption. Does not include "food and beverage sales" establishments that include a restaurant as an accessory use.

RESTAURANT OR CAFÉ—QUICK SERVICE. An establishment that prepares and serves food or beverages for immediate consumption, either on or off the premises; where food may be prepared before a customer places an order; where limited or no table service is provided; and where payment is required prior to consumption. Does not include "food and beverage sales" establishments that include a restaurant or café as an accessory use.

RETAIL, GENERAL. A retail establishment that sells a variety of merchandise and is not otherwise identified in this chapter as a unique retail use, including antique stores, appliance and electronics stores, beauty supply stores, bicycle stores with incidental repair, bookstores, camera shops with incidental developing, drugstores, department stores, dressmaking shops, florists, hardware stores, picture frame shops, retail bakeries, upholstery shops, and any use of like kind or character.

REVERSE VENDING MACHINE. An automatic mechanical device that accepts one or more types of empty beverage containers, including aluminum cans, glass containers, and plastic bottles, and issues a cash refund or a redeemable credit slip with a value not less than the container's redemption value as determined by the State.

REVERSE VENDING MACHINE—BULK. A reverse vending machine that occupies more than 50 square feet, is designed to accept more than one container at a time, and will pay by weight instead of by container.

REVERSE VENDING MACHINE—SMALL. A reverse vending machine that occupies 50 square feet or less, is designed to accept only one container at a time, and will pay only by container

SECONDHAND STORE. A retail store that primarily engages in the buying and selling of used products for general consumer use, including appliances, business equipment, clothing, furniture and household goods, jewelry, motors, musical instruments, tools, or any similar secondhand items. Does not include bookstores or antique stores, which are considered "general retail," or used vehicle sales, which are not permitted.

SHOPPING CENTER. A primarily retail-oriented commercial site with at least three separate retail, sales, service, or restaurant tenants that share common on-site pedestrian and parking facilities.

TEMPORARY USE. A short-term activity that may or may not meet the normal development or use standards of the applicable zoning district, but that occurs for a limited period of time and does not permanently alter the character or physical facilities of a property.

TRADE OR VOCATIONAL SCHOOL—PRIVATE. A private school that primarily provides specialized education or training for a particular profession or trade.

TRADE OR VOCATIONAL SCHOOL—PUBLIC. A school that is operated under the authority of a public school board or district, and that primarily provides specialized education or training for a particular profession or trade.

TRUCK WASH. A permanent, self-service or full-service establishment that provides facilities for washing vehicles with three or more axles.

VEHICLE SERVICE OR REPAIR. An establishment that provides any repair, alteration, servicing, restoration, or finishing of any vehicle as a primary use, including but not limited to body repair, collision repair, muffler and radiator shops, oil change shops, painting, tire and battery sales and installation, and towing.

WAREHOUSING, WHOLESALING, AND DISTRIBUTION. The provision of facilities used primarily for storing, selling, or distributing goods to retailers, contractors, commercial purchasers or other wholesalers, or to the branch or local offices of a company or organization.

APPENDIX A:

DESIGN GUIDELINES

Industrial and Research & Development

This section provides the design standards and guidelines for all new industrial and research & development (R&D) construction on the former Riverbank Army Ammunition Plant. These standards and guidelines are intended to ensure that new development results in a high-quality, highly desirable business park environment that encourages economic development and investment.

This document includes graphics that illustrate the standards and guidelines. These graphics are not meant to show the only possible design solution for any particular standard or guideline.

The language in this document follows these principles:

» *"Shall"* or *"must"* refers to a mandatory design standard that all projects must follow.

» *"Should," "may,"* or *"encouraged"* refers to a design guideline that the City recommends for all developers. While design guidelines are more flexible than design standards, the City will encourage applicants to follow the guidelines.



A. Site Planning

These standards and guidelines are intended to ensure that new development uses an efficient and functional arrangement of buildings and site components. They are also intended to ensure that projects contribute to a cohesive urban design for the RAAP site as a whole, while still allowing for creative flexibility from project to project.

1. Building Orientation

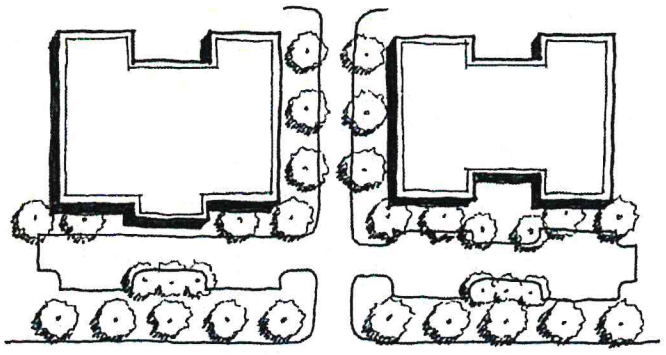
» Main building faces shall be oriented toward the street.
» Buildings should be arranged to be as close to public streets as practical. Large front setbacks are discouraged.
» Visitor entrances to buildings should be clearly visible from a public street.

2. Vehicular Access

» Access drives shall be limited, to the extent feasible.
» Common access drives shared by multiple sites are encouraged.

3. Parking Area Design

» Visitor, short-term, and accessible parking spaces may be provided in between building frontages and streets. However, the majority of employee and service parking should be behind the building.
» Surface parking should be divided into smaller units to reduce the visual impact of large expanses of pavement and vehicles. This can be accomplished by providing landscaped medians between parking bays and by providing pedestrian paths.
» The distance from parking spaces to building entries should be minimized.



Two sites sharing a common access drive.



Pedestrian path through parking lot.

4. Pedestrian Access and Amenities

» Clear pedestrian pathways should be provided to connect building entries to public sidewalks.

» Primary routes for pedestrian circulation should provide universal access wherever possible by reducing unnecessary steps and level changes.

» All sites should have safe and convenient pedestrian access to public rights-of-way.

5. Plazas, Green Spaces, and Pedestrian Areas

» Plazas, green spaces, and pedestrian areas and facilities should be incorporated within the site design as a whole. Where possible, they should be visible from public streets to provide visual interest.

» Employees should be provided with break and gathering spaces that are sufficient in size and scale and are located in areas buffered from traffic and vehicle circulation.

6. Internal Circulation

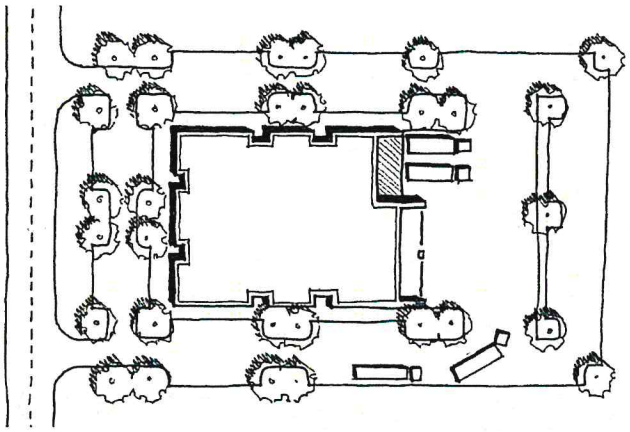
» Internal circulation shall be of sufficient size and have appropriate turning radii to prevent internal routes from requiring movement onto public or semi-private streets.

» Within development parcels, access drives shall be designed to provide sufficient vehicle stacking during peak traffic hours without impacting internal circulation or the adjoining street.

7. Service, Delivery, and Storage Areas

» The impact of service, delivery, and storage areas shall be mitigated by locating these areas on the sides or backs of buildings away from public streets and pedestrian circulation.

» Loading areas shall be located so that trucks being loaded or unloaded do not disrupt circulation within the site.



Loading area located to the rear of a building.

» Street-side loading shall be prohibited unless the loading dock is set back at least 70 feet from the street and is screened with materials that have a similar color, texture, roof style, and architectural detailing to the overall site and building design, and that form an opaque screen up to a height of 8 feet. This requirement shall not apply in RAAP-2 districts.

» On-site queuing space for vehicles waiting to be unloaded shall be provided where necessary.

» Outdoor storage, including company-operated vehicles other than passenger vehicles, shall be screened from public view using any combination of walls, berms, and landscaping.

» Refuse areas shall be designed to fit the number of trash and recycling bins required to accommodate all waste generated by building users.

» Refuse enclosures shall be constructed of durable materials with a similar color, texture, roof style, and architectural detailing to the overall site and building design.

» Refuse areas shall be designed to accommodate truck access.

8. Utilities and Backflow Preventers

» Utility cabinets and meters shall be contained in the building or otherwise fully screened from public view.

» Backflow prevention devices should be fully screened from public view through the use of landscaping, berms, low walls, or other screening techniques.

B. Architectural Design

The standards and guidelines in this section are intended to ensure that the appearance and details of new buildings create an aesthetically pleasing, human-scaled environment. They apply only to façades and portions of façades that are readily visible from a public street.

1. Massing and Façades

» Buildings shall be designed with the human scale in mind, incorporating overhangs, changes in wall planes and building height, vertical elements, and other architectural features to break up the bulk of a single building and provide visual interest.

» Façades shall incorporate structural or design elements to break wall expanses into smaller parts. Windows, doors, and other openings shall be designed to help implement this principle.

» Regardless of construction type, development shall include decorative façade treatments that minimize the sense of a boxy, "tilt-up"-style building.

» A building's façade should delineate a base, middle, and top of the building.



Changes in massing divide a building into smaller components.



An integrated palette of materials.



Decorative façade treatments add to a building's visual interest.

2. Materials and Detailing

» At least 75 percent of a building's front façade, and at least 25 percent of all other building façades, shall consist of non-metallic surfaces such as wood, stone, rock, brick, or glass. Side walls that are designed to be expandable shall be exempt from this requirement, provided that these walls are shown on the site plan. This requirement shall not apply in RAAP-2 districts.

» Cornices, parapets, and eaves should be used to denote the top of a building and provide greater visual interest on tall façades.
» Roof cornices, where employed, should incorporate materials, colors, and forms that fit the architectural character of the overall building design.
» Changes in parapet height should relate to changes in the building's massing, rather than creating higher false façades.

3. Windows

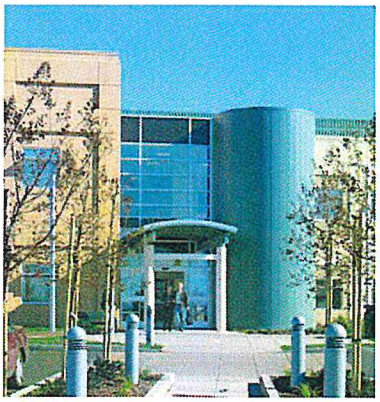
» Recessed windows are strongly encouraged. Other means of accenting the windows, such as distinctive color treatments, should also be considered in order to create a sense of depth on the façade.



Recessed windows add depth to a façade.

4. Entries

» Primary building entries should be emphasized by changes in building mass or building height, or by incorporating special architectural features such as overhangs.
» Architectural detailing and materials should be used to distinguish the hierarchy between visitor and employee/service entries.



Changes in massing denote a building entrance.

C. Green Building Components

The standards and guidelines in this section are intended to ensure that new development makes efficient use of resources and adheres to environmentally sensitive development practices.

1. Waste Reduction and Management

» Construction waste should be recycled, salvaged, or reused rather than disposed of in landfills or incinerators. Materials such as excavated soil or concrete should be reused on site where possible.

» Recycling should be encouraged by providing appropriate and convenient recycling facilities, including a recycling collection area that serves the entire building and provides space for the collection and separation of all applicable recyclable materials.

2. Sustainable Materials

» Light-colored concrete or other light-colored materials, which reflect heat rather than absorbing it, shall be used for walkways and plazas.

» Concrete and asphalt wastes produced during construction should be recycled and used as aggregate for walkway and roadway base.

» High volume fly ash concrete should be used wherever possible.

» Materials that incorporate recycled content should be used where possible.

» Materials that are produced within a 500-mile radius of Riverbank should be used where possible.

» Wood products that have been harvested and produced according to Forest Stewardship Council (FSC) requirements should be used where possible.



Recycled materials were used to construct this seating area.

3. Roofs

» Roofing materials should be chosen based upon their durability.

» Cool roofing materials should be used to maximize energy savings. Cool roofing materials have a high reflectivity and emissivity; they reflect the sun's rays from the roof (reflectivity) and limit the amount of heat stored by the roof (emissivity).

4. Energy Use

» Daylighting should be incorporated into new buildings to reduce energy costs and provide natural light.

» Passive solar heating and cooling, using building materials with a high thermal mass, should be used to reduce the need for mechanical heating and cooling.

» High-performance windows should be used to minimize heat loss and gain.

» On-site renewable energy systems should be incorporated into new development where possible. Potential renewable energy sources include solar and wind collection systems.

5. Stormwater Management

» Permeable paving materials should be used for walkways, driveways, and parking lots. These materials include porous concrete, porous asphalt, and open-grid pavers.

» Impervious surfaces should be minimized by clustering development.

» Vegetated areas, such as swales and rain gardens, should be used to slow stormwater runoff and filter its pollutants before it enters storm drains.

» Where possible, stormwater should be collected from rooftops and diverted into storage areas, then used for irrigation. As an alternative to stormwater capture, vegetated roofs, or "green roofs," may be used to absorb stormwater and allow it to evaporate.



Parking lot with permeable asphalt.

D. Landscape Design

The standards and guidelines in this section are intended to ensure that the amount, layout, and materials of landscaped areas contribute to the enjoyment and comfort of a building's users.

1. Function

» Landscaping shall be used to provide an attractive setting for development; soften hard building contours; shade parking areas and other large expanses of pavement; buffer and merge various uses; mitigate building height; and screen unsightly uses.

» Developers are strongly encouraged to provide more landscaping than the minimum standard, particularly in publicly viewed areas, in order to create a more attractive environment for employees and the general public.

» Landscaping should be designed and located to provide stormwater treatment where possible.

» Shade trees should be planted where they can provide shade for pedestrian areas, such as outdoor patios, and improve people's comfort during hot months.



Landscaping accentuates a building entrance.



Landscaping provides an attractive edge treatment for this site.

2. Building Entries

» Where provided at entryways, landscaping shall not block or screen views to the entryway.

» Landscaping should be used to accentuate entryways that face public streets.

3. Adjacent Properties and Streets

» Landscaping elements shall be used to partially screen industrial activity from nearby residential uses and public streets.

» Landscaping along street frontages should provide a unifying character to the street and enhance the appearance of individual developments.

4. Parking Areas

» Surface parking areas facing public streets shall be partially screened by berms or landscaping.

» For security purposes, openings shall be incorporated into landscaping to provide views into the site.

» Parking areas shall incorporate plantings and trees to provide shade and reduce impervious surfaces.



Trees provide shade for parked cars.

5. Plant Selection

» Landscape plants shall be chosen based upon the characteristics of Riverbank's climate to ensure that the plants will thrive with minimal irrigation. California natives and climate-adapted plants are both suitable.

» A variety of plants shall be used to provide a mix of heights, colors, and textures.

» Integrated pest management (IPM) techniques, rather than pesticides, should be utilized to control disease, invasive plants and pests. IPM techniques include planting species that will attract beneficial insects, installing mechanical trapping devices for pests, and using dense ground covers to shade out weeds.

» Lawn and turf areas should be minimized in landscape design, since they require frequent watering and maintenance.



Landscaping with varied colors and features.

6. Irrigation

» Plants shall be grouped within the landscape, or hydrozoned, based upon their different water needs.

» Drip irrigation shall be used rather than overhead irrigation spraying where possible.

» Irrigation controls that regulate the use of irrigation in response to rainfall shall be used.

E. Signage

The standards and guidelines in this section are intended to ensure that signs are designed and constructed to make a positive contribution to the overall character of the development project.

1. Design

» Signs shall be constructed of high quality and durable materials.
» Signs should relate to the materials, colors, and shapes of the architectural elements of the building they serve.
» Where possible, signs should align with major architectural features such as building entrances.
» Signs should be designed to be easily legible. Legibility can be optimized by providing high contrast between the sign content and its background.



Monument sign constructed from high-quality materials.



Wall sign integrated into architectural details.

2. Wall Signs

» Wall signs should fit within a building's architectural details rather than obscuring them.
» Signs are encouraged to be designed as individual letters and icons directly attached to a building façade, rather than as a separate sign with a background and a frame attached to the building.

3. Monument Signs

» Multiple-tenant monument signs should display tenant information proportionately to the size of each tenant.

F. Exterior Lighting

The standards and guidelines in this section are intended to ensure that the design of fixtures and the light provided contributes to the character of development and does not impact adjacent development or the night sky.



Downward-facing light fixture.

1. Lighting Design

- » Exterior lighting shall be designed to provide light only in areas where it is necessary for comfort and safety.
- » The lighting of landscape features, architectural embellishments, or signage shall be kept to a minimum. Where lighting is appropriate, downlighting should be used where possible rather than uplighting.
- » Exterior lighting should be integrated with the architectural and landscape design.

2. Lighting Height

- » Parking lots shall be designed with a greater number of shorter, low wattage, tightly spaced fixtures rather than a lesser number of taller, higher wattage fixtures. Fixtures shall not exceed 18 feet in height.
- » Pedestrian sidewalks and plazas should be illuminated at night, using downward-facing lights where possible.



Downward-facing lights along a pedestrian path.

3. Lighting Levels

- » Lighting levels shall be adequate to provide for safety, but shall be limited to conserve energy and avoid light pollution.
- » Lighting shall employ control features to avoid light being directed offsite.
- » Lighting of outdoor service, loading, or storage areas shall be contained within each area's boundaries and enclosure walls. No light spillover shall occur outside the service area, and light sources shall not be visible from the street or adjacent properties.
- » Curfew controllers should be used to turn off all nonessential lights after a specified evening time.

G. Fences and Walls

The standards and guidelines in this section are intended to ensure that the location and appearance of fences and walls meets functional requirements while contributing positively to the appearance of development.

1. Location

- » Fences and walls shall not be used between buildings and public roadways, except where they are less than 48 inches high or are necessary to screen maintenance, service, or outdoor storage areas.
- » Screening fences and walls may be used as part of the internal site design.



Semi-transparent fence along a site's edge.

2. Design

- » Fences and walls should use similar materials, heights, and construction techniques throughout a development. Design elements of fences and walls should reflect the materials, colors, and design details of nearby buildings.
- » Fences and walls should be semi-transparent. They should be opaque only where they are shielding maintenance, service, or outdoor storage areas.
- » Walls or fences that are over 60 feet in length and visible from a public street should be articulated with a change in appearance. This can be achieved through a change in the material, texture, or wall plane.
- » Service fencing that is not visible from public rights-of-way can be provided as coated chain-link fencing.
- » Fences should return to meet buildings rather than surround them.

APPENDIX B:

DESIGN GUIDELINES

Retail

This section provides the design standards and guidelines for all retail construction on the former Riverbank Army Ammunition Plant. These standards and guidelines are intended to ensure that new retail development results in a high-quality, desirable retail environment that encourages investment and is attractive to customers.

This chapter includes graphics that illustrate the standards and guidelines. These graphics are not meant to show the only possible design solution for any particular standard or guideline.

The language in this chapter follows these principles:

- *"Shall"* or *"must"* refers to a mandatory design standard that all projects must follow.
- *"Should," "may," "encouraged"* refers to a design guideline that the City recommends for all developers. While design guidelines are more flexible than design standards, the City will encourage applicants to follow the guidelines.



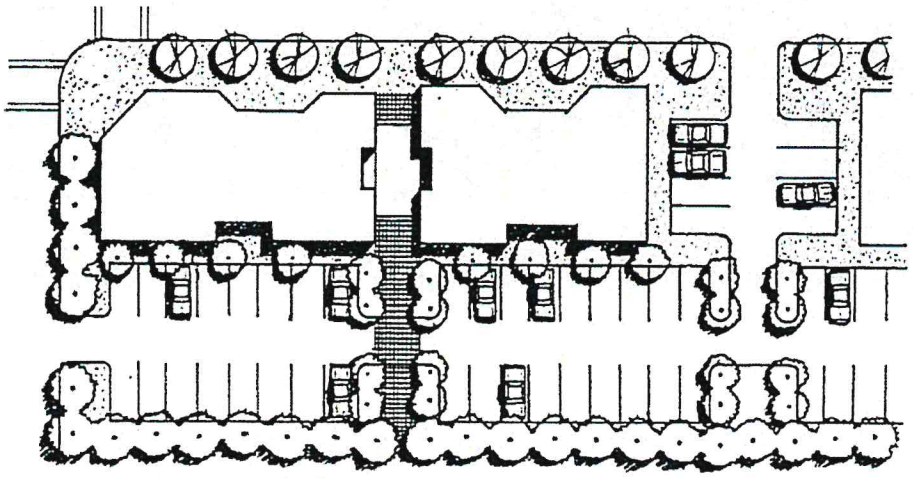
A. Site Planning

These standards and guidelines are intended to ensure that new development uses an efficient and functional arrangement of buildings and site components.

1. Building Orientation

» Building entrances facing the street are strongly encouraged.

» Building orientation should be coordinated with adjoining properties to avoid creating nuisances such as noise, light intrusion, invasion of privacy and traffic, particularly when development is adjacent to sensitive uses such as residential development.

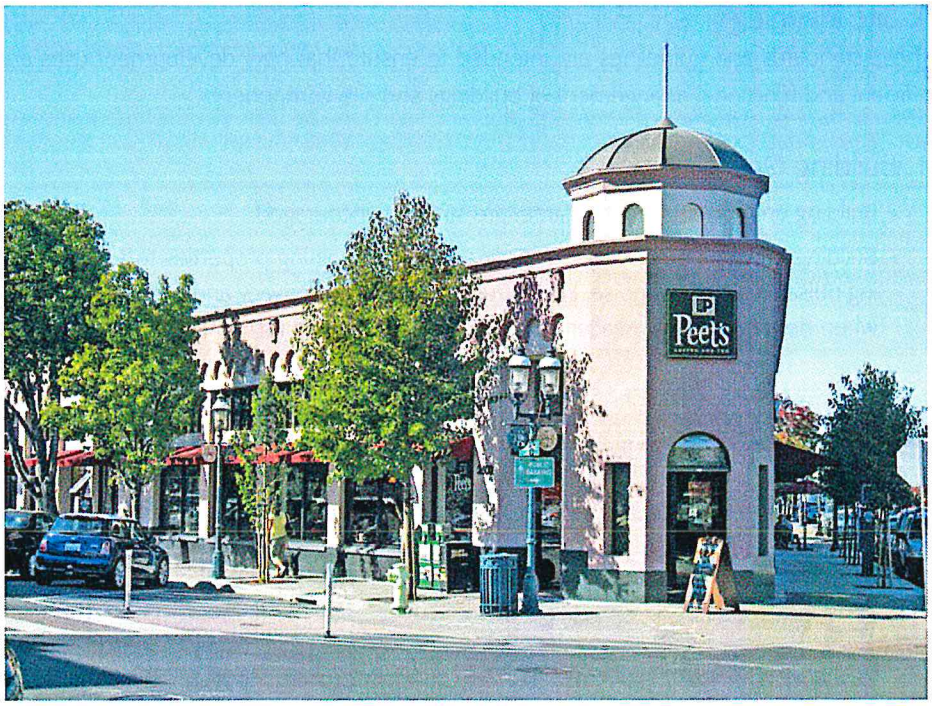


Buildings can front onto the street as well as parking lots.

2. Building Setback

» Buildings should be located as close as possible to the front setback line, while respecting the character of the existing street edge.

» Portions of a building may be set back from the main façade to create usable outdoor space, such as an outdoor seating area for a restaurant.

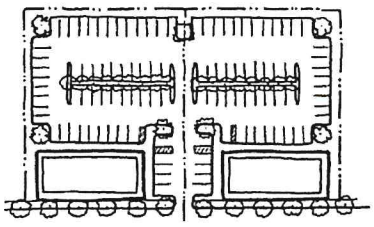


A corner tower helps to anchor an intersection.

3. Corner Sites

» Main entrances of corner buildings should be located at the corner, where feasible.

» Buildings located on corners should include special design and architectural features to help anchor intersections.



Adjacent sites share a common access drive.

4. Vehicular Access

» Access drives at corner lots should be limited but sufficient in number to provide safe and efficient movement of traffic to and from a site.

» Access to corner lot driveways should be located as far as possible from the intersection.

» Common access drives shared by multiple sites are encouraged.

5. Parking Area Design

» Parking shall be minimized between buildings and public streets.

» Surface parking shall be divided into smaller units to reduce the visual impact of large expanses of pavement and vehicles. This can be accomplished by providing landscaped medians between parking bays and by providing pedestrian paths.

» Surface parking areas facing a public street shall be buffered by landscaping, with openings in the landscaping to provide visibility and security.

» The distance from parking spaces to building entries should be minimized.



Landscaping buffers the edge of a parking lot and divides the lot into smaller units.

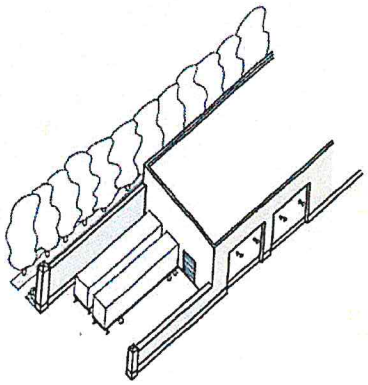
6. Internal Circulation

» Within development parcels, access drives shall be designed to provide sufficient vehicle stacking during peak traffic hours without impacting internal circulation or the adjoining street.

7. Service, Delivery, and Storage Areas

» The impact of service, delivery, and storage areas shall be mitigated by locating these areas on the sides or backs of buildings away from public streets, automobile parking, and pedestrian circulation.

» Loading areas shall be located so that trucks being loaded or unloaded do not disrupt circulation within the site.



Screening for a loading area.



Refuse enclosure made with durable, high-quality materials.

» Street-side loading shall be prohibited unless the loading dock is set back at least 70 feet from the street and is screened with materials that have a similar color, texture, roof style, and architectural detailing to the overall site and building design, and that form an opaque screen up to a height of 8 feet. This requirement shall not apply in RAAP-2 districts.

» On-site queuing space for vehicles waiting to be unloaded shall be provided where necessary.

» Outdoor storage, including company-operated vehicles other than passenger vehicles, shall be screened from public view using any combination of walls, berms, and landscaping.

» Refuse areas shall be designed to fit the number of trash and recycling bins required to accommodate all waste generated by building users.

» Refuse enclosures shall be constructed of durable materials with a similar color, texture, roof style, and architectural detailing to the overall site and building design.

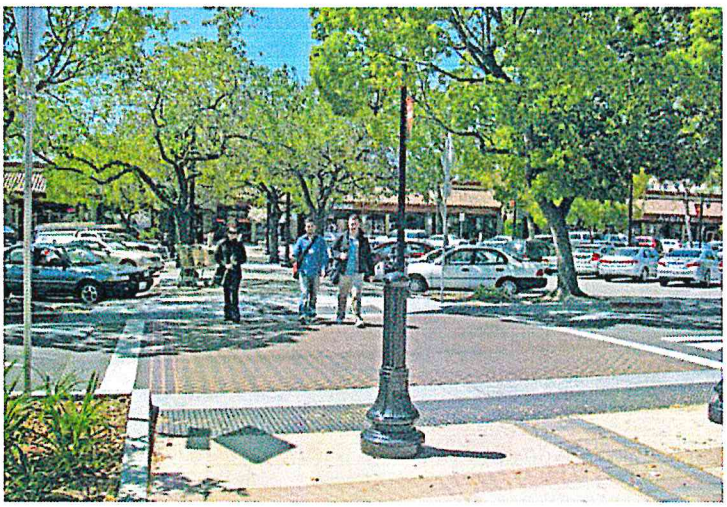
» Refuse areas shall be designed to accommodate truck access.

8. Utilities and Backflow Preventers

» Utility cabinets and meters should be contained in the building or otherwise fully screened from public view.

» Backflow prevention devices should be fully screened from public view through the use of landscaping, berms, low walls, or other screening techniques.

» Developers are strongly encouraged to utilize minimally obtrusive designs for backflow prevention devices. Backflow devices should be located inside the building where possible.



A clearly marked pedestrian path.

9. Pedestrian Access and Amenities

» Clearly marked pedestrian pathways shall be provided to connect building entries to public sidewalks through parking areas.

» Primary routes for pedestrian circulation shall provide universal access wherever possible by reducing unnecessary steps and level changes.

» Special design features should be utilized to increase the safety for pedestrians within parking lots, across driveways, and in other locations where the pedestrian walkway should be defined. Potential design features include textured pavement, decorative paving, striping, or raised "speed table" crossings.

10. Plazas, Green Spaces and Pedestrian Areas

» Plazas, green spaces, and pedestrian areas should be integrated within the site design as a whole.

» Seating, including informal seating areas such as low walls and stairs, should be incorporated into plazas, green spaces, and pedestrian areas.

» Lighting should be incorporated into plazas, green spaces, and pedestrian areas to ensure that they are safe at night.

» Public plazas should be readily accessible from and connected to parking areas.



A public plaza that is directly accessible from an adjacent parking lot.

B. Architectural Design

The standards and guidelines in this section are intended to ensure that the appearance and details of new buildings create an aesthetically pleasing, human-scaled environment.



Storefront windows facing a street.

1. Massing and Façades

» Building frontages facing the street shall have transparent windows along a minimum of 40% of their length. Where possible, these windows should look directly into the store. Display windows should be used where windows into the store are not practical.

» Retail centers shall be designed as a complex of buildings rather than as a single large structure, in order to provide visual interest and a human scale.

» Façades shall incorporate structural or design elements to break long walls into smaller parts. Windows, doors, and other openings should be designed to help implement this principle.

» Buildings should be designed with the human scale in mind, incorporating outdoor patios, overhangs, changes in wall planes and building height, vertical elements, and other architectural features to break up the bulk and mass of single buildings and provide visual interest.



Building with details that provide visual interest.

» A building's façade should delineate a base, middle, and top of the building.

» Regardless of construction type, development shall include decorative façade treatments that minimize the sense of a boxy, "tilt-up"-style building.

» Buildings with multiple tenants should be subdivided into separate storefronts through the use of various materials and colors, as well as through massing changes and/or façade articulation.

2. Materials and Detailing

» The use of genuine materials, such as wood trim, is recommended rather than simulated materials, such as foam trim.

» Where one building material is used to simulate another, it should be used in a way that is in keeping with the character and properties of the material being simulated.

» All detailing on the building facades should be integral to the architectural design and not tacked onto the surface.

» Cornices, parapets, and eaves should be used to denote the top of a building and provide greater visual interest on tall façades.

» Roof cornices, where employed, should incorporate materials, colors, and forms that fit the architectural character of the overall building design.

» Changes in parapet height should relate to changes in the building's massing, rather than creating higher false façades.



A cornice denotes the top of a building.

3. Windows

» All retail buildings should position windows for visibility by both pedestrians and motorists at street level.

» On the façade where the primary entry is located, storefront, transom, and display windows, along with doors, should be provided on at least 50% of the length of the façade.

» Windows should be vertically proportioned, with a greater height than width. Appropriate height-width ratios typically range from 1.5:1 to 2:1. Where horizontally proportioned windows are used, they should include muntins that divide them into vertically proportioned segments.

» Recessed windows are strongly encouraged. Other means of accenting the windows, such as distinctive color treatments, should also be considered in order to create a sense of depth on the façade.



Vertically proportional storefront windows.

4. Entries

» The main entrance of a building should be designed so that it is accessible to all people, regardless of their mobility level.

» Buildings with multiple tenants should provide separate entrances to each store.

» Primary building entries should be emphasized by changes in building mass, building height, special façade or window treatments, or a combination thereof.

» The design of building entrances should be integrated with other architectural features of the building.

» Storefront doors should provide views into the interior space of buildings.

5. Awnings, Canopies and Arcades

» The use of awnings, canopies, and arcades is encouraged to provide shade and cover from the elements and to reinforce the pedestrian scale.

» The design and material of awnings, canopies and arcades should be consistent with the design character of the building to which it is attached.

» The height of awnings and canopies should be consistent across a building façade, with a minimum clearance of 8 feet above the sidewalk.

» Arcades should be designed to provide at least 10 feet of clear space between the building façade and the edge of the arcade.



An arcade provides shelter and shade.

C. Green Building Components

The standards and guidelines in this section are intended to ensure that new development makes efficient use of resources and adheres to environmentally sensitive development practices.

1. Waste Reduction and Management

» Construction waste should be recycled, salvaged, or reused rather than disposed of in landfills or incinerators. Materials such as excavated soil or concrete should be reused on site where possible.

» Recycling should be encouraged by providing appropriate and convenient recycling facilities, including a recycling collection area that serves the entire building and provides space for the collection and separation of recyclable materials.

2. Sustainable Materials

» Light-colored concrete or other light-colored materials, which reflect heat rather than absorbing it, shall be used for walkways and plazas.

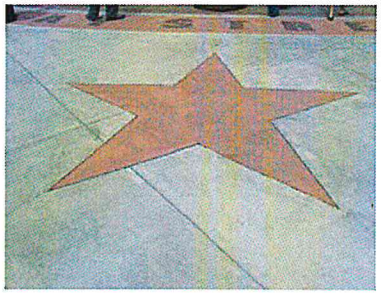
» Concrete and asphalt wastes produced during construction should be recycled and used as aggregate for walkway and roadway base.

» High volume fly ash concrete should be used wherever possible.

» Materials that incorporate recycled content should be used where possible.

» Materials produced within a 500-mile radius of Riverbank should be used where possible.

» Wood products that have been harvested and produced according to Forest Stewardship Council (FSC) requirements should be used where possible.



Light-colored concrete with an inset decorative feature.

3. Roofs

» Roofing materials should be chosen based upon their durability.

» Cool roofing materials should be used to maximize energy savings. Cool roofing materials have a high reflectivity and emissivity; they reflect the sun's rays from the roof (reflectivity) and limit the amount of heat stored by the roof (emissivity).

4. Energy Use

» Daylighting should be incorporated into new buildings to reduce energy costs and provide natural light.

» Passive solar heating and cooling, using building materials with a high thermal mass, should be used to reduce the need for mechanical heating and cooling.

» High-performance windows should be used to minimize heat loss and gain.

» On-site renewable energy systems should be incorporated into new development where possible. Potential renewable energy sources include solar and wind collection systems.



Swales within a parking lot.

5. Stormwater Management

» Permeable paving materials should be used for walkways, driveways and parking lots. These materials include porous concrete, porous asphalt, and open-grid pavers.

» Impervious surfaces should be minimized by clustering development.

» Vegetated areas, such as swales and rain gardens, should be used to slow stormwater runoff and filter its pollutants before it enters storm drains.

» Where possible, stormwater should be collected from rooftops and diverted into storage areas, then used for irrigation. As an alternative to stormwater capture, vegetated roofs, or "green roofs," may be used to absorb stormwater and allow it to evaporate.

D. Landscape Design

The standards and guidelines in this section are intended to ensure that the amount, layout, and materials of landscaped areas contribute to the enjoyment and comfort of a building's users.



Shade trees adjacent to pedestrian path.

1. Function

» Landscaping shall be used to provide an attractive setting for development; soften hard building contours; shade parking areas and other large expanses of pavement; buffer and connect various uses; mitigate building height; and screen unsightly uses.

» Developers are strongly encouraged to provide more landscaping than the minimum standard, particularly in publicly viewed areas, in order to create a more attractive environment for employees and the general public.

» Landscaping should be designed and located to provide stormwater treatment where possible.

» Shade trees should be planted where they can provide shade for pedestrian areas, such as outdoor patios, and improve people's comfort during hot months.

2. Building Entries

» Where provided at entryways, landscaping shall not block or screen views to the entryway.

» Landscaping should be used to accentuate entryways that face public streets and parking lots.

3. Adjacent Properties and Streets

» Landscaping elements shall be used to partially screen parking and service areas from nearby residential uses and public streets.

» Landscaping along street frontages should provide a unifying character to the street.

4. Parking Areas

» Surface parking areas facing public streets shall be partially screened by landscaping.

» For security purposes, openings shall be incorporated into landscaping to provide views into the site.

» Parking areas shall incorporate plantings and trees to provide shade and reduce impervious surfaces in parking areas.



A clearly marked pedestrian path divides a parking lot into smaller units.

5. Plant Selection

» Landscape plants shall be chosen based upon the characteristics of Riverbank's climate to ensure that the plants will thrive with minimal irrigation. California natives and climate-adapted plants are both suitable.

» A variety of plants shall be used to provide a mix of heights, colors, and textures.

» Integrated pest management (IPM) techniques, rather than pesticides, should be used to control disease, invasive plants and pests. IPM techniques include planting species that will attract beneficial insects, installing mechanical trapping devices for pests, and using dense ground covers to shade out weeds.

» Lawn and turf areas should be minimized in landscape design, since they require frequent watering and maintenance.

6. Irrigation

» Plants shall be grouped within the landscape, or hydrozoned, based upon their different water needs.

» Drip irrigation shall be used rather than overhead irrigation spraying where possible.

» Irrigation controls that regulate the use of irrigation in response to rainfall shall be used.

E. Signage

The standards and guidelines in this section are intended to ensure that signs are designed and constructed to make a positive contribution to the overall character of the development project.

1. Design

» Only monument, wall, window, awning, and canopy signs shall be used.

» Box signs shall not be internally illuminated. A sign composed of individual three-dimensional letters and symbols may be internally illuminated.

» Signs shall be constructed of high quality and durable materials, such as brick, wood or metal.

» Signs should relate to the materials, colors, and shapes of the architectural elements of the building they serve.

» Signs should be designed to be easily legible. Legibility can be optimized by providing high contrast between the sign content and its background.

2. Monument Signs

» One monument sign shall be permitted on each development site.

» Monument signs shall not exceed a maximum height of 4 feet and a maximum width of 10 feet.

» Multiple-tenant buildings should display tenant information proportionately to the size of each tenant.



Monument sign for multiple tenants.

3. Wall Signs

» Wall signs should fit within a building's architectural details rather than obscuring them.

» Signs are encouraged to be designed as individual letters and icons directly attached to a building façade, rather than as a separate sign with a background and a frame attached to the building.

4. Window Signs

» Window signs should not be placed in a manner that obscures primary views into and out from the storefront.

» Painted signs and letters should present a neat and aligned appearance.



Professionally designed window sign.

5. Awning and Canopy Signs

» Any signs on awnings should be directly painted onto the awning materials.

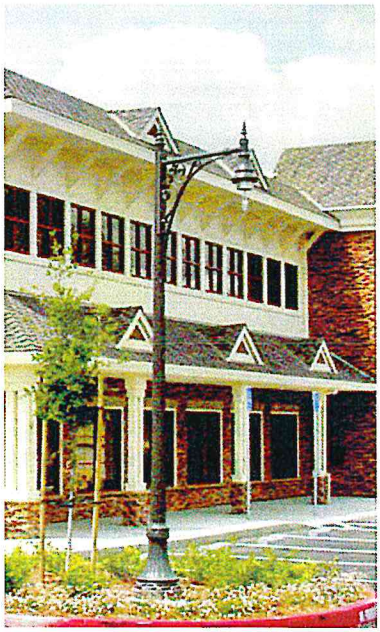
» Where a canopy sign is located above the canopy, the use of individual three-dimensional letters is strongly recommended.



Canopy sign with individual letters.

F. Exterior Lighting

The standards and guidelines in this section are intended to ensure that the design of fixtures and the light provided contributes to the character of development and does not impact adjacent development or the night sky.



Downward-facing decorative light fixture.

1. Lighting Design

» Decorative lighting fixtures that coordinate with the architectural design of the building are encouraged.

» Exterior lighting shall be designed to provide light only in areas where it is necessary for comfort and safety.

» The lighting of landscape features, architectural embellishments, or signage shall be kept to a minimum. Where lighting is appropriate, downlighting should be used where possible rather than uplighting.

» Exterior lighting should be integrated with the architectural and landscape design of the overall development.

2. Lighting Height

» Parking lots shall be designed with a greater number of shorter, low wattage, tightly spaced fixtures rather than a lesser number of taller, higher wattage fixtures. Fixtures shall not exceed 18 feet in height.

» Pedestrian sidewalks and plazas should be illuminated at night, using downward-facing lights where possible. For sidewalks, low lighting fixtures, such as bollards with lights, are encouraged. For plazas, taller light poles are encouraged in combination with low fixtures, as appropriate.

3. Lighting Levels

» Lighting levels shall be adequate to provide for safety, but shall be limited to conserve energy and avoid light pollution.

» Lighting shall employ control features to avoid light being directed offsite.

» Lighting of outdoor service, loading, or storage areas shall be contained within each area's boundaries and enclosure walls. No light spillover shall occur outside the service area, and light sources shall not be visible from the street or adjacent properties.

» Curfew controllers should be used to turn off all nonessential lights after a specified evening time.

G. Fences and Walls

The standards and guidelines in this section are intended to ensure that the location and appearance of fences and walls meets functional requirements while contributing positively to the appearance of development.

1. Location

» Fences and walls shall not be used between buildings and the public roadways, except where they are necessary to screen maintenance, service, or outdoor storage areas.

» Screening fences and walls may be used as part of the internal site design.



A semi-transparent wall screens a seating area.

2. Design

» Fences and walls should use similar materials, heights, and construction techniques throughout a development. These design elements should reflect the materials, colors, and design details of nearby buildings.

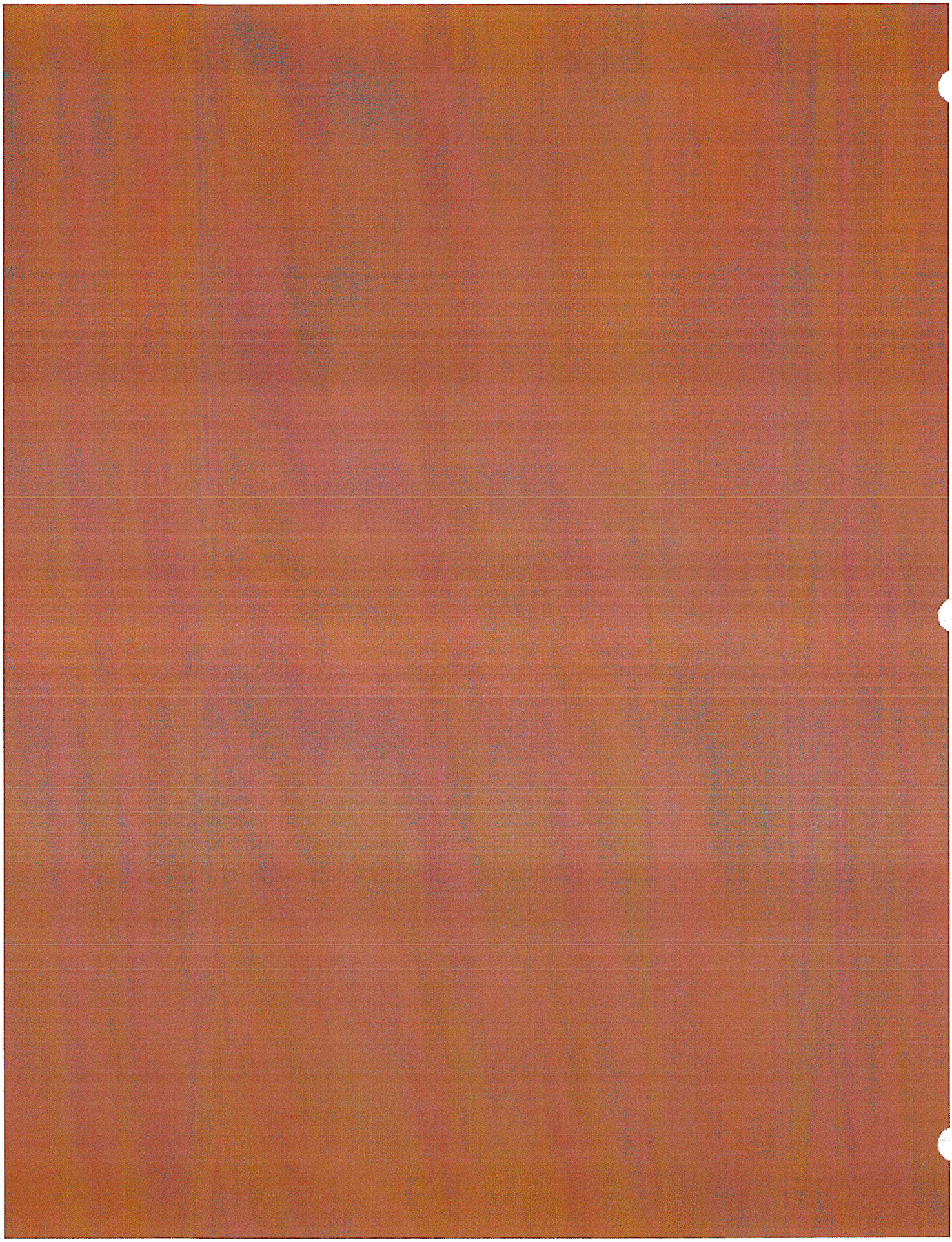
» Fences and walls should generally be semi-transparent. They should be opaque only where they are shielding maintenance, service, or outdoor storage areas.

» Walls or fences that are over 60 feet in length and visible from a public street should be articulated with a change in appearance. This can be achieved through a change in the material, texture, or wall plane.

APPENDIX C:

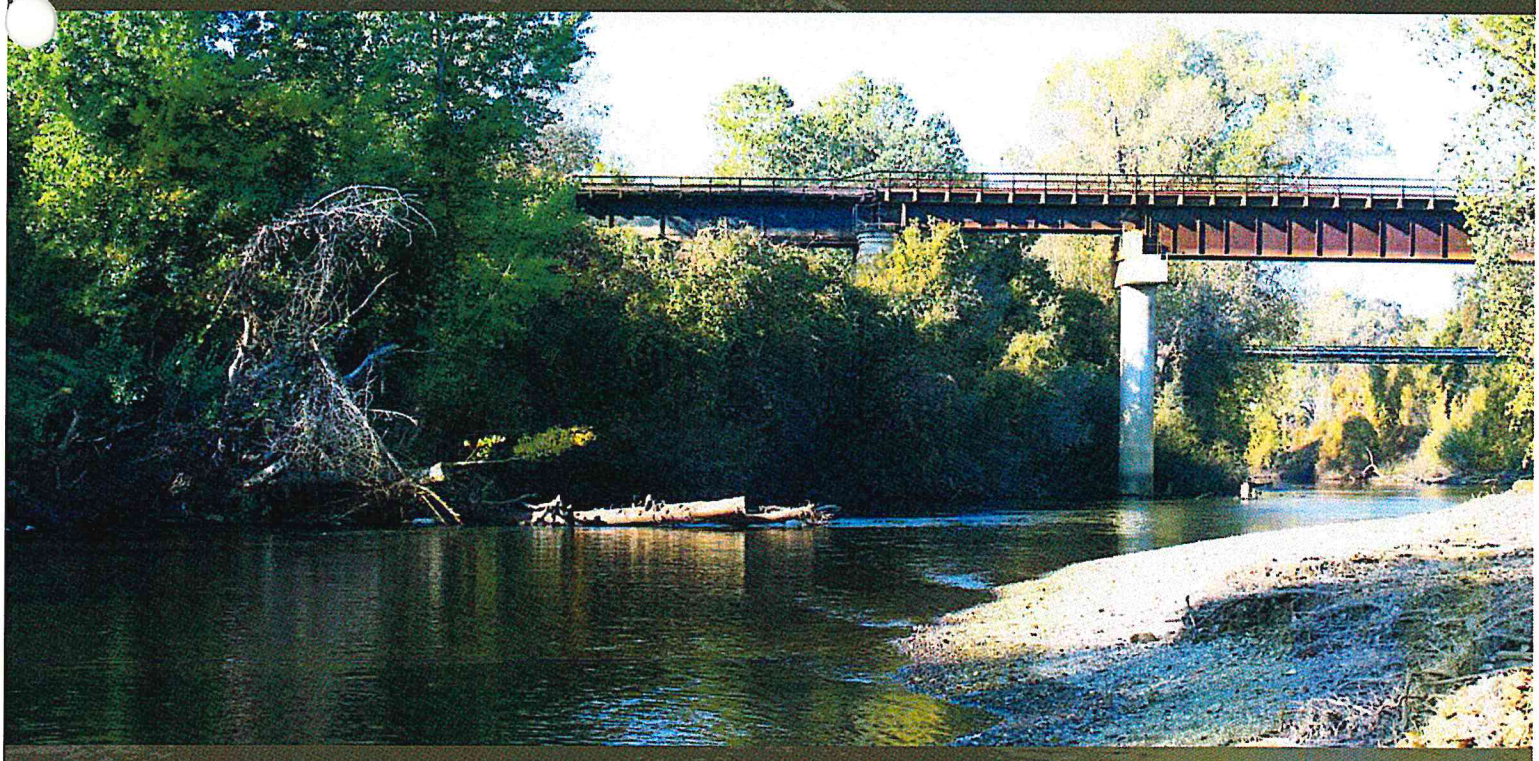
DESIGN MANUAL

Model Standards & Specifications for Low Impact Development Practices



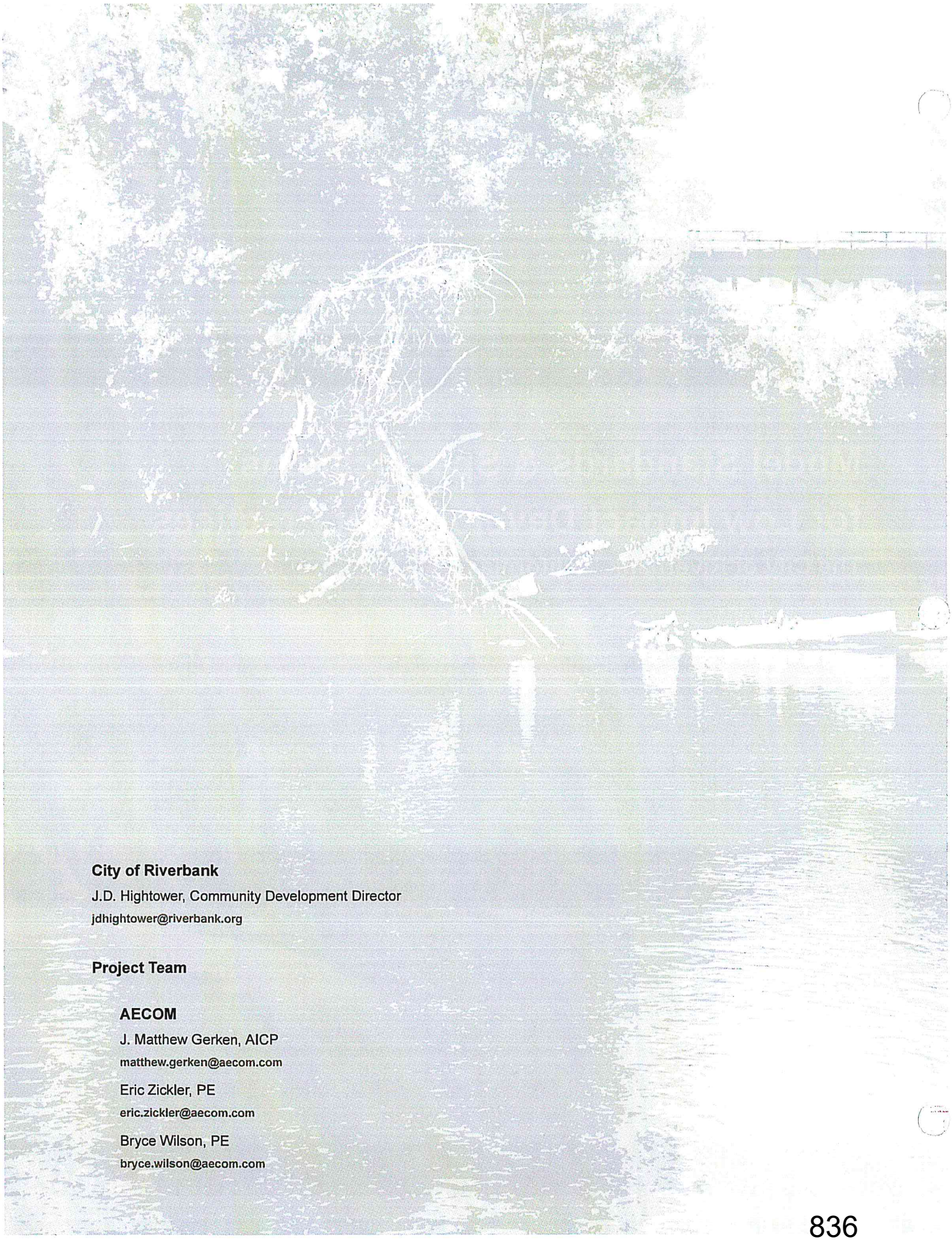
Model Standards & Specifications for Low Impact Development Practices

The City of Riverbank, California



January 2013

AECOM



City of Riverbank

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1.0 Introduction

In order to comply with existing and future stormwater discharge regulations, while promoting a resource efficient and sustainable approach to reducing stormwater runoff pollution, the City of Riverbank (City) has recognized the need to develop Low Impact Development (LID) standards and specifications. The City's General Plan provides the overarching policy framework for a more natural approach to drainage. This document provides specific guidance for LID solutions that are customized to the local context.

Land planning and drainage design should be integrated to **emphasize water conservation** and the use of on-site naturalized features to **protect water quality and downstream receiving water bodies**. To achieve this, natural and engineered hydrologic controls can mimic predevelopment hydrologic conditions to **improve water quality**, **reduce flooding,** and **improve overall watershed health**.

LID stormwater treatment standards **appropriate for the local conditions** will be used to **guide new development and redevelopment** projects. This guidance ensures more thoughtful and responsible stormwater management, stormwater pollution prevention, **reduction of community infrastructure costs,** and environmental enhancement in drainage designs.

As Riverbank and other San Joaquin Valley cities have developed, stormwater runoff from impervious hardscape has had a substantial negative impact on the Stanislaus River, the San Joaquin Delta, and regional wildlife. By implementing standards and specifications for municipal LID planning and development, tributaries to the San Joaquin River, including the Stanislaus River, can realize water quality and ecological benefits – both on a watershed and local scale. LID standard practices of intercepting stormwater runoff at or near the source and using natural vegetation to settle and filter stormwater runoff pollutants can have a widespread beneficial impact to the rivers of the Central Valley and the ecological health of the Sacramento-San Joaquin Delta.

In addition to stormwater management and treatment, the implementation of LID practices can augment groundwater recharge, assist in the removal of air pollutants, mitigate urban heat island effect, and sequester carbon. Local communities will also benefit from pleasing landscape aesthetics, natural resource conservation, and habitat creation - all of which can provide stormwater treatment functions.

Although the techniques for LID implementation are well documented in many regions, there are limited LID standards or manuals developed specific to the unique conditions in the San Joaquin Valley. These conditions include seasonal rainfall patterns, arid climate, hardpan soils, high groundwater tables, and native vegetation. This manual provides targeted design guidance for developers, designers and City staff to implement LID solutions at any scale for any land use.

How to Use This Document

The following flow chart summarizes the steps to be taken when implementing LID practices for a project.

Step 1: Site Context — *Section 1*

- Map your site and its preliminary design considerations
- Review local regulatory conditions and applicability to your proposed development
- Understand LID goals, benefits, and challenges

Step 2: Site Assessment — *Section 2*

- Analyze the your site to identify constraints and opportunities
  - Land Use/Existing Infrastructure
  - Hydrology
  - Groundwater
  - Topography
  - Soils and Geology
  - Space Constraints
- Identify appropriate Best Management Practices (BMPs) using BMP Selection Matrix

Step 3: Detailed LID Design — *Section 3*

- Understand site opportunities, goals, and constraints
- Review BMP Fact Sheets
  - Underground Infiltration
  - Bioretention Area
  - Vegetated Swale
  - Filter Strip
  - Detention Pond
  - Constructed Wetland
  - Permeable Pavement
  - Rainwater Harvesting
  - Green Roof
- Implement and design BMPs

Riverbank Context

The City of Riverbank General Plan 2005-2025 identifies 14 different land uses categories, as shown on the following page in Figure 2. LID opportunities and applications will vary across these different land uses. However for the purpose of this manual, land uses have been distilled down into the following three simple categories:

- greenfields;
- redevelopment areas; and
- special conditions

The purpose of developing these categories is to assist in identifying the type of BMPs and understanding the opportunities and constraints associated with each.

Figure 3 shows the historical growth patterns in the City. This map aids in identifying areas that may be more or less likely to experience development or redevelopment over the next 30 years. For example, residential areas built within the past 20 years are considered a stable land use and most of these are unlikely to see major change in the near future. By analyzing the City's growth patterns, in conjunction with other planning data (such as the Downtown Specific Plan), areas have been identified that fit within the categories of greenfield development, redevelopment or special conditions sites. These opportunity sites are shown in Figure 1 below and discussed in more detail on the next pages

The specific LID techniques and design guidance provided in this manual were developed by overlaying these potential development areas with the specific physical (e.g. soil, hardpan) and drainage conditions. The intent is to provide stormwater management techniques that are specific to the expected conditions that designers will encounter when developing in the Riverbank area.

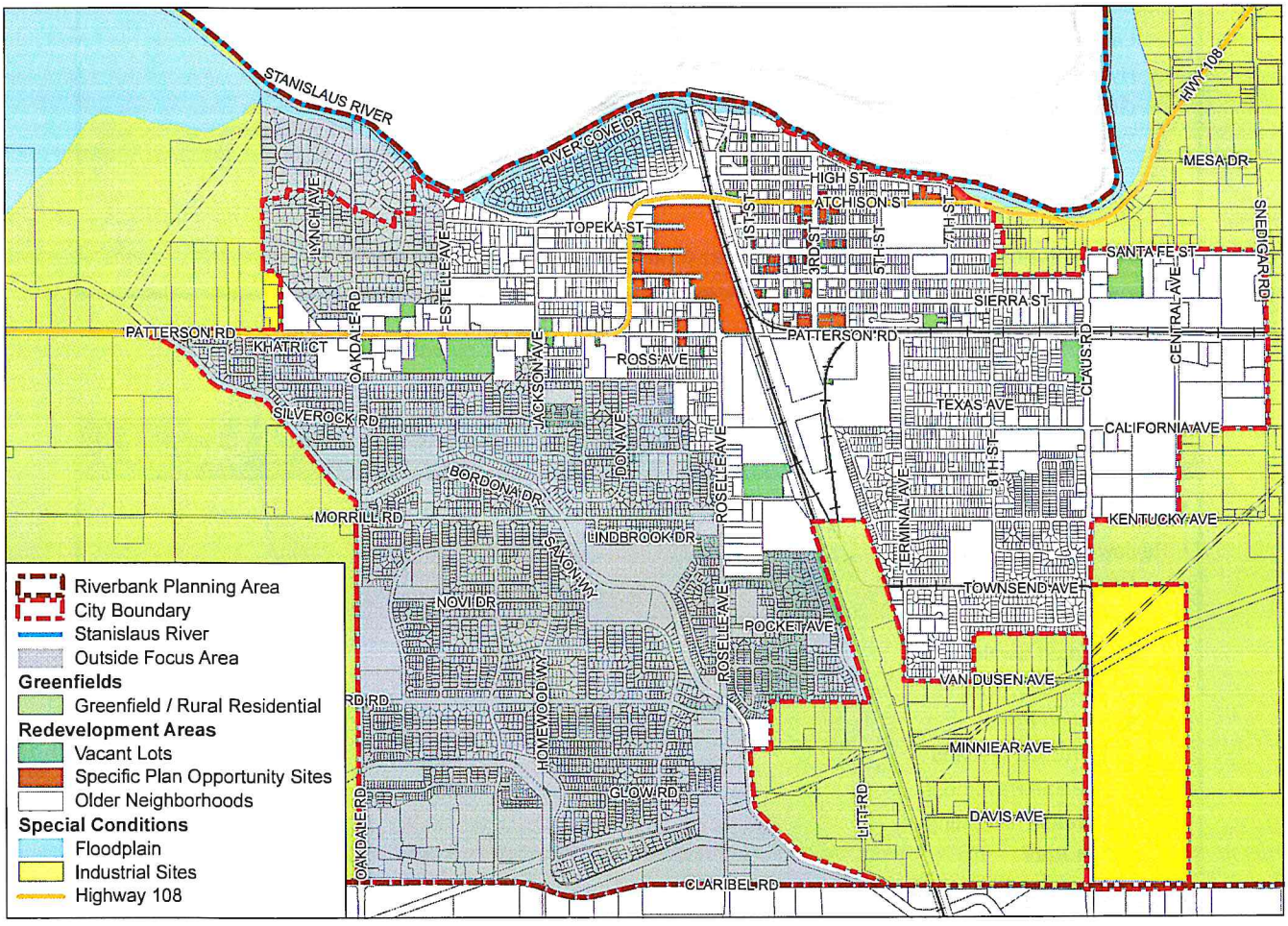


Figure 1: Opportunity Sites Map (Source: General Plan)
Map of entire Riverbank Planning Area located in Appendix C

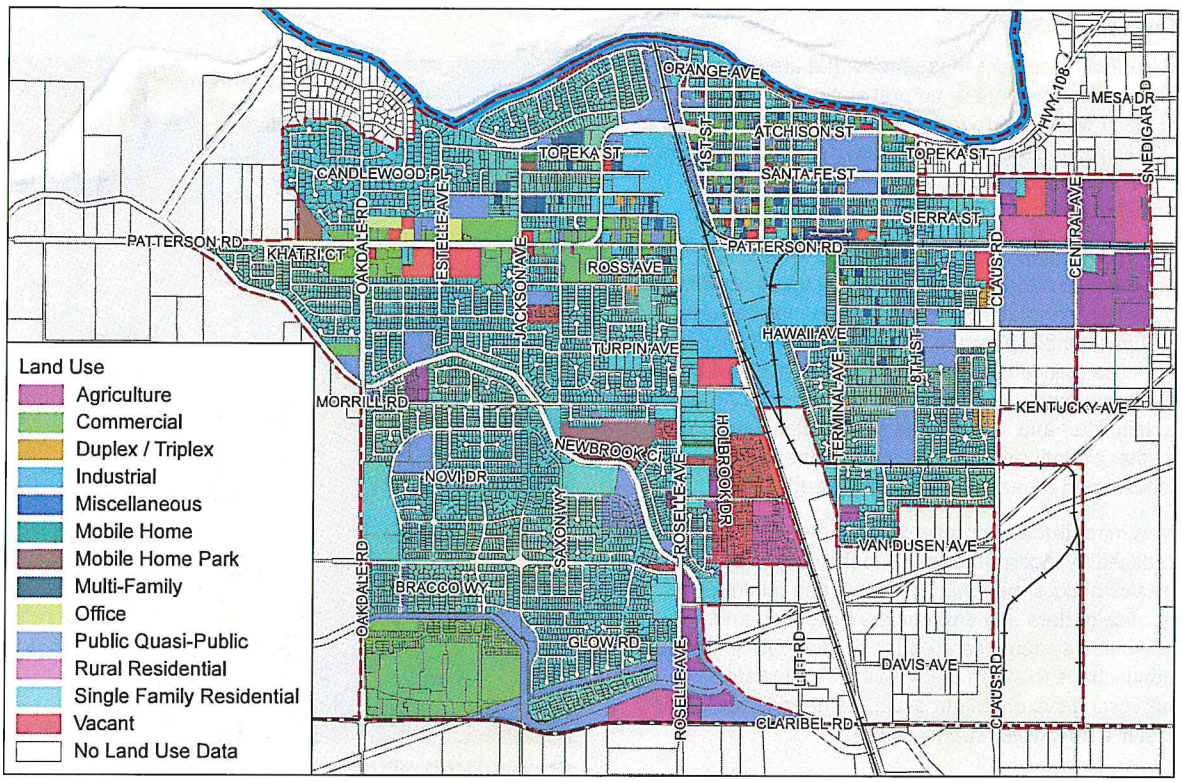


Figure 2: Existing Land Use Map (Source: General Plan)

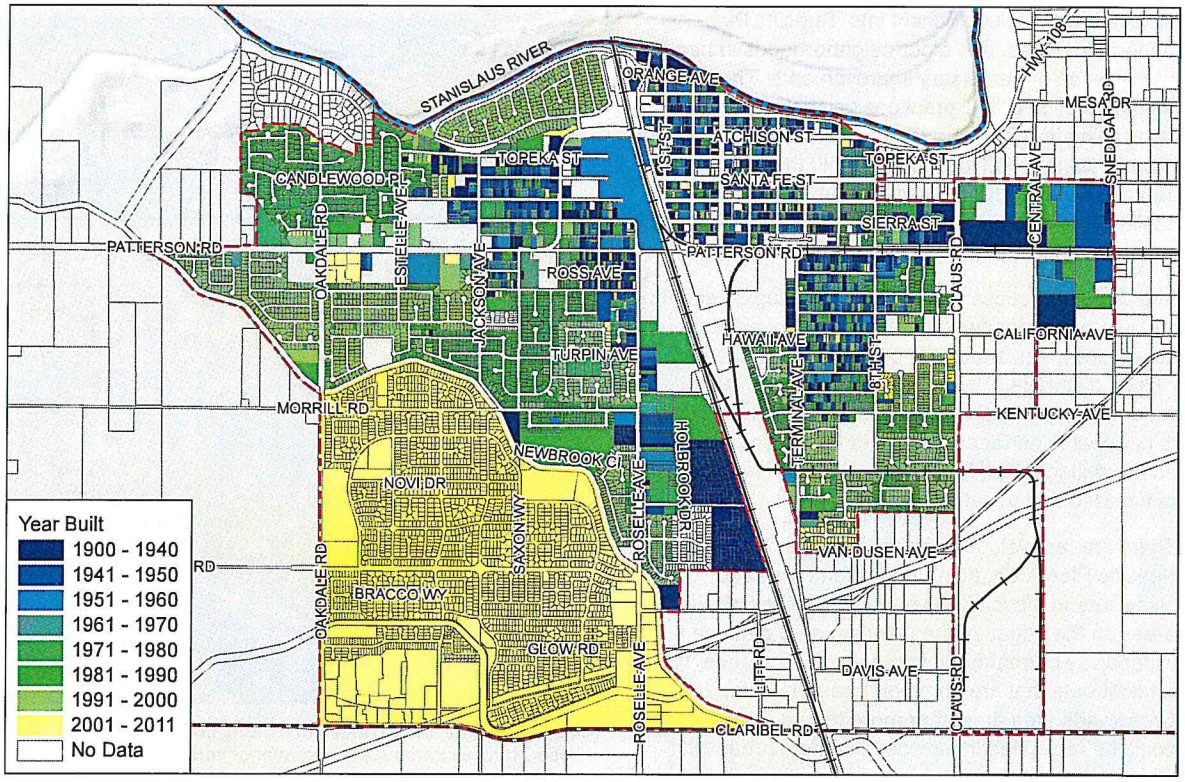


Figure 3: Historic Growth Patterns Map (Source: City of Riverbank)

Greenfields

Greenfield lands are those areas that are undeveloped or are in a substantially natural state. The majority of the land within the Riverbank Planning Area outside of City limits would be classified as greenfield (such as rural residential parcels, agricultural land, and undisturbed natural areas).

When developing within a greenfield area, it is important to maintain existing hydrological conditions by conserving natural areas and existing drainage features, where possible. Impervious hardscape surfaces (conventional roofs and paving) should be minimized and designed to discharge to pervious areas to help filter and infiltrate the stormwater runoff. To further aid infiltration, native soil compaction in landscaped areas should be minimized.

New infrastructure costs related to development can be reduced by incorporating LID techniques. Vegetated swales and permeable pavements can minimize or replace gutters and drain pipes. Retention and infiltration systems can reduce or eliminate the need for connections to storm drain mains. A rainwater harvesting system might avoid the need to upsize or install a new water supply line.



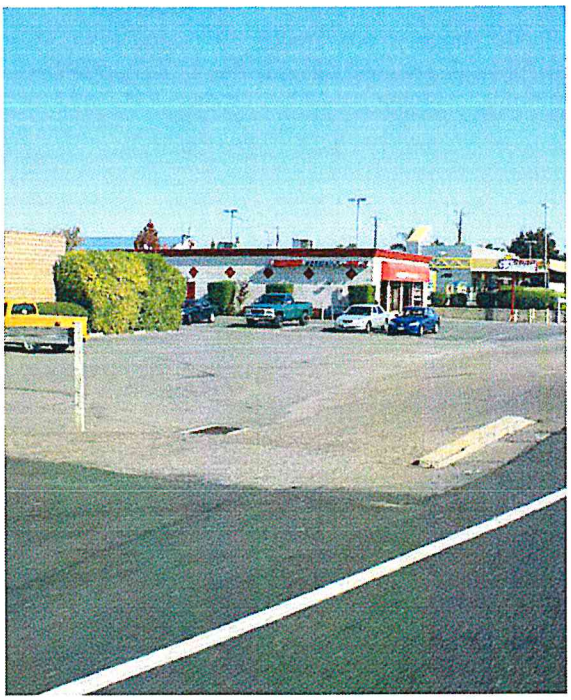
Greenfield areas with no prior development can use a wide array of treatment elements, but care should be taken to preserve the natural character of the site in order to minimize pollutants and changes to drainage patterns.

Redevelopment Areas

Areas that have the most opportunity for redevelopment within the City include vacant lots, Specific Plan Opportunity Sites, and older neighborhoods in need of revitalization or necessary improvements. Though implementation of LID practices can be more challenging in redevelopment areas, they are of crucial importance in these locations. Within these more urbanized areas LID can provide substantial water quality benefits by removing pollutants and sediment currently reaching local streams and rivers.

Site design practices that provide hydrologic benefits and improve groundwater conditions in previously developed areas should be considered. These can include distributed BMPs that slow down or infiltrate water closer to its source, conversion of paved surfaces to permeable surfaces, rainwater harvesting retrofits, and rerouting runoff from impervious surfaces across naturalized and vegetated areas.

There are redevelopment possibilities in the Downtown Specific Plan Area, along Patterson Road and elsewhere in the City. Development in the Specific Plan areas on the edges of the planning area can use a wider array of treatment elements. For instance, the roundabouts that are common throughout the Crossroads area and other more recent development could be replicated in new development areas with stormwater functionality incorporated into the center of the traffic circle.



Sites in the developed areas of the City present important opportunities to reduce the amount of impervious surface and treat runoff before it enters the storm drain system.

Special Conditions

Riverbank has land uses and spaces that may experience development or redevelopment activity that do not fit within the "greenfield" or "redevelopment" categories, as it relates to LID design and stormwater management. These areas include sites that are within the floodplain, large industrial sites, and the State Highway 108 (SR108) corridor.

When constructing in the floodplain and adjacent to riparian areas it is imperative to implement solutions that do not include raised surfaces, berms, or any type of grading than may inhibit the flood flows and change upstream flood levels. These areas in the floodplain often possess a certain amount of ecological value, and it is important to develop solutions that conform to the adjacent habitat and ecological conditions.

Large industrial sites often include expansive impervious surfaces and therefore are important areas to be considered for implementation of LID solutions. However, designers should be cautious of possible contaminated soil conditions and the potential for infiltration-based LID solutions to facilitate the transport of those contaminants into the groundwater basin.

Development within the SR108 corridor must consider the applicability of Caltrans specifications and design guidelines. Given its large area and ample right-of way, this area offers many opportunities for LID to manage and treat stormwater runoff. Consideration should be given to installing stormwater facilities concurrently with the construction of safety and screening facilities.



SR108 has many sections with significant unused right-of-way area ideally suited for LID treatment facilities.



Standing water remains at the vacant tomato cannery multiple days after a rain event, showing the need for stormwater management.



Jacob Meyers Park, located adjacent to the Stanislaus River, has numerous structures and development located within the floodplain.

Regulatory Context

The State Water Resources Control Board (SWRCB) Water Quality Order 2003-0005-DWQ, NPDES General Permit No. CAS000004 (Permit) established the requirements for storm water discharges from small municipal separate storm sewer systems (MS4s). The City of Riverbank participates in this permit along with three other co-permittees (the cities of Ceres, Oakdale, and Patterson) and is designated as an MS4 operator.

Permit requirements include the prohibition of the discharge of any materials other than stormwater, implementation of BMPs to the maximum extent practicable (MEP) to protect water quality, the development and implementation of a Storm Water Management Plan (SWMP), reducing the discharge of pollutants to the MEP, and annually reporting on the progress of SWMP implementation to the Regional Water Quality Control Board (RWQCB).

The Permit also contains supplemental provisions (in "Attachment 4") for participating communities that are designated as fast growing, which the City qualifies for due to recent population growth. They include specific post-construction design standards and BMP implementation procedures. These design standards are summarized on the following page. The BMPs implemented should focus on LID, source control, and treatment control.

Typical Development Process

Confirm Zoning. Areas are zoned to facilitate the development of compatible neighboring land uses. Zoning rules also set building and other standards or determine how much of a certain land use may occur.

Planning Review Process. Most projects are required to go through the Planning Review Process. Applicants have the option of submitting a Preliminary Proposal to the Planning Department for preliminary feedback, and would follow this with a full Planning Application. This application is then reviewed for approval.

Building Plan Review. Additional processes, such as obtaining a building permit, may be required after planning approval and prior to the commencement of construction.

Inspections. The aim of the Building Division is to create partnerships with the development community, business community and citizens to accomplish mutually beneficial goals such as the safe, successful and timely completion of projects.

More information on these processes as well as associated forms, applications, guides, and fee schedules can be found on the City's "Development Center" website:

www.riverbank.org/Depts/DevelopmentServices/pages/Development%20Center.aspx

Relevant Documents

Fact Sheet for State Water Resources Control Board Water Quality Order No. 2003 – 0005 – DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004

This is the permit which contains the waste discharge requirements for stormwater discharges from MS4s. This is the primary guiding document for stormwater quality regulations in Riverbank and is summarized on this and the following page.

www.swrcb.ca.gov/water_issues/programs/stormwater/docs/final_ms4_permit.pdf

City of Riverbank Storm Drain System Master Plan (June 2008)

This plan serves as a basis for storm drain infrastructure and as an aide to assessing the impact of new and future development. It contains a summary of the existing storm drain system and recommended improvements.

City of Riverbank Public Works Department

Storm Water Management Program for the Cities of Ceres, Oakdale, Patterson, Riverbank, Report of Waste Discharge (March 10, 2003)

This document establishes the four cities as co-permittees to the small MS4 Permit, characterizes the conditions of recieving streams, and describes proposed stormwater quality management activities and objectives.

www.waterboards.ca.gov/water_issues/programs/stormwater/swmp/ceres_swmp.pdf

City of Riverbank Standard Specifications, Section 7 - Storm Drains (2007)

This document section contains the required City standard design parameters, specifications, and details for storm drain infrastructure built within the public right-of-way within the City.

City of Riverbank Public Works Department

Stanislaus County Standards and Specifications, Chapter 4 - Storm Drainage (2007)

This document chapter contains the required County standard design parameters, specifications, and details for storm drain infrastructure built within, or to be maintained by, the County. Though not directly applicable to development in the City, this is useful for background and reference.

www.stancounty.com/publicworks/pdf/2007_Imp_stand.pdf

Design Standards

The Permit's "Attachment 4" design standards apply to projects that fall into one of the following categories[1]:

Applicable Development Categories
Commercial or Industrial Developments (of 100,000 square feet or more)
Automotive Repair Shops
Retail Gasoline Outlets
Restaurants
Home Subdivisions (with 10 housing units or more)
Parking Lots (5,000 sf or more; or 25 or more parking spaces and potentially exposed to stormwater runoff)

The following must be implemented for all categories:

- **Mitigate peak runoff flow rate.** Post-development peak stormwater discharge rates shall be equal or less than the peak pre-development rates for developments where the increased runoff rate will result in increased potential for downstream erosion.
- **Conserve and create natural areas.** Developments shall incorporate and implement the following items:
  - concentrate development and minimize disturbance of remaining areas;
  - minimize the clearing of native vegetation;
  - maximize trees and vegetation, cluster tree areas, and promote native and/or drought tolerant plants in landscaped areas and parking lot islands; and
  - preserve any riparian areas and wetlands.
- **Minimize stormwater pollutants of concern.** Development must be designed to minimize the discharge of pollutants of concern (POC) to the MEP. The BMPs used must be chosen for the optimal removal of the POC. POC are pollutants that exhibit one or more of the following characteristics:
  - current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water;
  - elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms; or
  - the detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.
- **Protect slopes and channels.** Development must be designed to minimize erosion by:
  - conveying runoff safely from slope tops;
  - stabilizing disturbed slopes;
  - utilizing natural drainages to the MEP;
  - stabilizing permanent channel crossings;
  - vegetating slopes with native or drought tolerant vegetation, as appropriate; and
  - installing energy dissipaters at storm drain outlets.
- **Provide storm drain stenciling and signage.** All inlets and catch basins within a project area should be labeled with standard warnings.
- **Properly design outdoor material and trash storage areas.** Trash and materials stored outdoors that have the potential to contaminate stormwater must be placed in a covered and enclosed structure that averts drainage from surrounding areas and prevents runoff and spillage from leaving.
- **Provide proof of ongoing BMP maintenance.** Permanent BMPs must have a system in place for maintenance, with an inspection at least annually.
- **Incorporate treatment control BMPs for water quality.**[2] Pollutant levels in site stormwater runoff must be mitigated through the use of permanent post-construction treatment control BMPs designed to either a volumetric or flow-based standard. The LID techniques and stormwater BMP design standards contained in this manual are intended address this water quality requirement.

There are additional design provisions, intended to futher reduce the potential for pollutant discharge, that apply to specific development categories. These are outlined in the table below and explained in greater detail in Attachment 4 of the Permit.

Development Category	Additional Design Provisions
Commercial/Industrial	Loading Dock Areas, Repair/Maintenance Bays, Vehicle/Equipment Wash Areas
Auto Repair Shops	Loading Dock Areas, Repair/Maintenance Bays, Vehicle/Equipment Wash Areas, Fueling Areas
Retail Gasoline Outlets	Fueling Areas
Restaurants	Equipment/Accessory Wash Areas
Home Subdivisions	none
Parking Lots	Reduce Impervious Area, Infiltrate Runoff, Limit Oil Contamination

This regulatory basis requiring the implementation of various site design techniques, to which LID is especially well suited, is a foundation for this manual.

1 Multi-family developments are assumed to be captured in the Home Subdivision category and/or the Parking Lots category.

2 Restaurants and retail gasoline outlets that are smaller than 5,000 square feet are excluded from this water quality requirement.

Overview of Low Impact Development (LID)

LID is an approach toward development that seeks to mimic the natural processes occuring on a site while addressing the small, frequent storms which combined produce the majority of a site's runoff.

LID practices can greatly improve stormwater quality by encouraging processes (such as sedimentation, filtration, or evapotranspiration) which reduce the pollutants present in urban and suburban runoff.

Another primary purpose of LID is to preserve a site's pre-development hydrologic pattern by minimizing impervious surfaces, capturing the low-intensity events that contribute to erosion, and providing a measure of control over the larger events, which can cause both erosion and flooding.

LID stormwater managment facilties, referred to as Best Managment Practices (BMPs), are most effective when dispersed throughout a site to address runoff at its source. Draining sidewalks to vegetated filter strips, constructing parking lots with permeable pavement, and outletting roof leaders to the surface of a bioretention area can all provide treatment and attenuation of stormwater flows.

Though there are numerous reasons to implement LID on a site, there are also a variety of constraints that will limit certain practices and inform an ideal design. The site constraints summarized below are discussed in more detail in Section 2, with explanation of how each constraint will influence LID design.

Goals and Benefits

- **Improve water quality.** A primary goal is the protection of downstream receiving water bodies from increased pollutant loads. All BMPs have potential to provide treatment. However, site constraints can hamper this (underground infiltration and permeable pavement, for example, must be able to infiltrate in order to provide acceptable pollutant removal).
- **Attenuate flows.** LID can be very effective at mitigating flooding and erosion issues. The volume of stormwater can be reduced by capturing runoff in retention systems (which drain by infiltration or reuse) and the flowrate and velocity of runoff can be lowered, to varying degrees, by all BMPs.
- **Recharge groundwater.** By increasing pervious area and managing the runoff from impervious area, LID is able to help restore water to the aquifer through infiltration.
- **Reduce potable water consumption.** A central component of LID is an emphasis on water conservation, primarily through the harvesting of rainwater. Utilizing captured water allows a site to address stormwater challenges while also lowering municipal water use.
- **Habitat restoration.** In addition to their hydrological goals, with proper design many BMPs are able to serve as desireable habitat.
- **Improve aesthetics.** Landscape-based stormwater management facilities and preservation of natural areas offer development sites unique opportunities to create an appealing character.
- **Reduction of community infrastructure costs.** Widespread use of LID can serve a community by helping to reduce costs, such as storm drain upsizing, erosion maintenance, and street repairs.

Potential Constraints

- **Impermeable soils.** Sites with high clay content in the native soils typically have low infiltration rates, limiting the use of infiltration practices.
- **Shallow hardpan.** Many areas in Riverbank have a hardpan condition, which is a very dense layer of soil near the surface that is largely impermeable. This will influence the ability to provide infiltration.
- **Shallow groundwater.** Certain areas, especially closer to the river, have a shallow groundwater table which precludes the use of infiltration.
- **Tributary area.** BMPs differ in the amount of drainage needed to function properly. Some are only effective with smaller catchments, while others can handle, or even require, larger upstream areas.
- **Available space.** In areas with existing development, especially dense commercial areas, it can be difficult to fit BMPs into locations receiving drainage.
- **Retrofit capability.** It is often preferred to reuse a site's existing infrastructure, which may affect BMP siting or design. Infiltration practices must have a setback from building foundations and wells.
- **Steep slopes.** Steep terrain can constrain designs due to lack of flat space, issues with infiltration, and the need to keep flows relatively slow and shallow.

Regulatory Considerations

- Facilities should achieve the water quality standard targeting pollutants, especially pollutants of concern.
- Design facilities and lay out sites to promote and conserve natural and vegetated areas.
- Help mitigate potential runoff rate increases and erosive flows through dispersed retention, infiltration, and energy dissipation.



The deployment of BMPs on a site can take many forms, which allows the facilities to integrate with landscaping while still providing optimal stormwater functionality. These examples show bioretention areas within an outdoor courtyard (above left), a vegetated swale and filter strip serving as a buffer for homes (above right), and a rocky swale area meant to be appealing while dry but able to handle infrequent large flows.

2.0

Site Assessment

This section provides a framework for selecting appropriate LID BMPs. Proper site planning and BMP selection involves a comprehensive assessment to evaluate existing conditions, such as hydrology, land use, runoff water quality, topography, and soils.

This site assessment will help to identify and understand constraints that exist at the site that will influence the performance and applicability of different BMP options. The maps and selection matrix included in this section can be used to quickly identify which BMPs are most appropriate for a site. This initial assessment should always be followed up and validated by a detailed site investigation.

Floodplain

Areas within the floodplain (see Figure 4) have a high groundwater table and an increased likelihood for erosion. It is essential that development in this area does not change the ground elevation in a manner that might result in an increased water surface elevation during a flood event.

Development should limit grading and the creation of surface features (such as berms or unreinforced channels) that could be washed-out or substantially eroded in a flood. Surface discharge from BMP facilities should be in the form of dispersed sheet-flow, with point discharges minimized or eliminated.

Groundwater

Groundwater plays a significant role in the hydrologic process, and it is important to promote groundwater recharge, especially in areas with limited rainfall. LID features can facilitate groundwater recharge by promoting rainwater infiltration. Groundwater recharge maintains local water tables, provides base flow to streams and rivers during dry periods, and maintains the integrity of riparian habitats.

It is important to determine the depth to the groundwater table's surface (see Figure 5), as a high groundwater table that is close the surface must be protected from contamination. Infiltration into the subgrade soil of a BMP is not allowed if there is less than 10 feet of separation between the bottom of the BMP and the top of the seasonally high groundwater table. BMPs constructed in areas of high groundwater tables should be installed with an impermeable liner (such as a waterproof membrane or compacted native clay) if their design would promote infiltration.

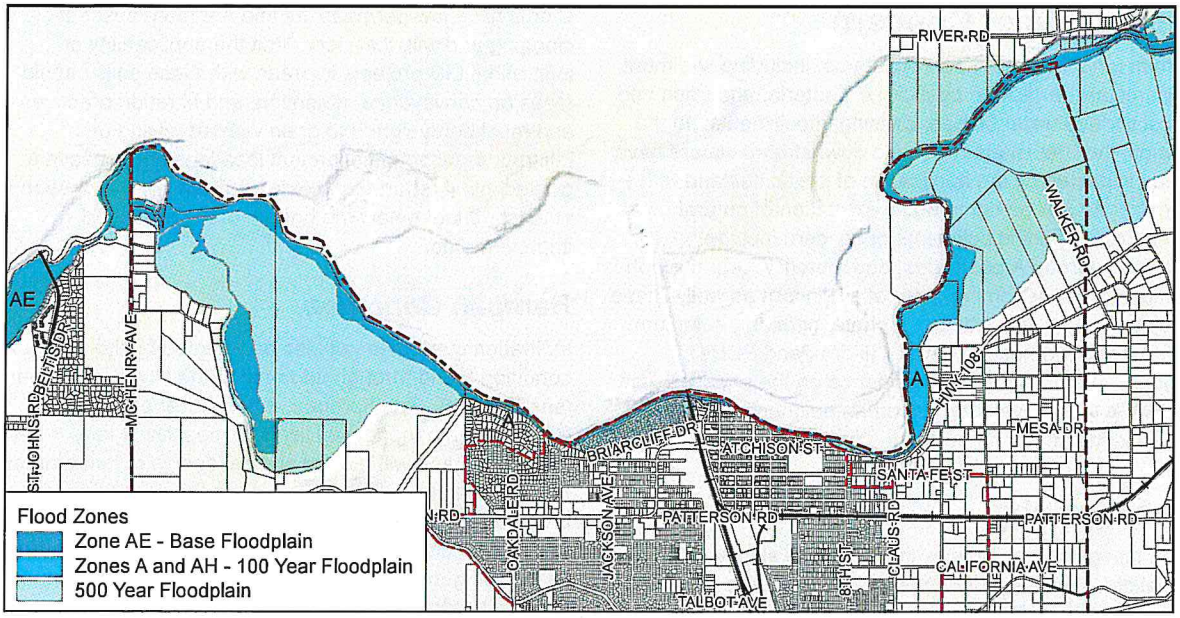


Figure 4: Flood Zones Map (Source: FEMA 2011)

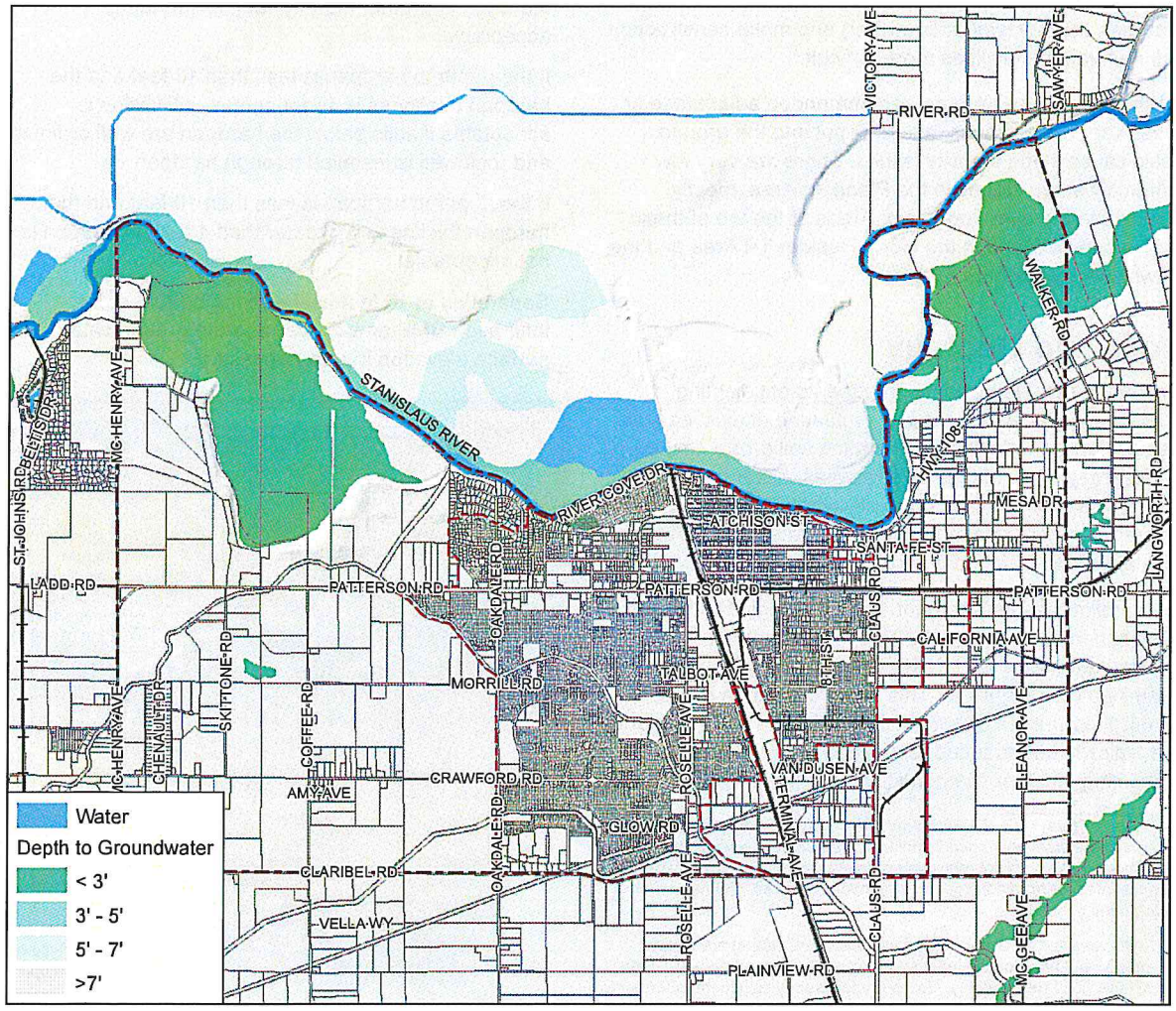


Figure 5: Expected Depth to Groundwater Map (Source: NRCS 2011)

Pollutants of Concern

Urban runoff can transport pollutants, including sediment, oils, metals, fertilizers, pesticides, bacteria, and trash into local surface water bodies, causing impairments.[1] In the region, the Stanislaus River and downstream waters have been impacted by the application of pesticides and fertilizer as well as commercial extraction of natural resources. Specific pollutants of concern include: diazinon, Group A pesticides, and mercury. Urban runoff pollutants are becoming more of a concern as well. These include: organics, organophosphate, nitrogen, selenium, pyrethroids, pathogens, fecal coliform, and PCBs (industrial runoff). General guidance on the effectiveness of BMPs to remove common urban pollutants is included in Appendix B.

Topography

The topography of the site, including site slopes and locations of existing drainages, can impact the effectiveness of BMPs and must be considered. Steeper slopes (from 5%-15%) increase flow velocity (which may cause scour and reduced treatment effectiveness in both receiving or conveying stormwater) and make construction of larger volume facilities more difficult.

Infiltration practices are not recommended adjacent to or within very steep slopes, as water put into the ground could cause slope stability issues. There are very few extremely steep slopes in the Planning Area, mostly adjacent to the river floodplain. Areas at the top of these slopes can be found in the North Residential Area and the Downtown Residential Area.

Soils and Geology

One of the most important components of selecting appropriate LID features is the evaluation of existing soils and geologic conditions to determine soil group, texture, and permeability. Many LID strategies, especially retention BMPs, function optimally when they are able to infiltrate runoff. A minimum infiltration rate of 0.5 in/hr is typically required for infiltration facilities.

As a preliminary assessment, the Hydrologic Soil Group designation assigned by the National Resources Conservation Services (NRCS) to the site soils can be examined (see Figure 7). This rating describes the physical properties of each soil type.[2] Soils of Type A or B are typically better suited for infiltration practices (assuming all other site conditions are met). Soils of Type C or D have low permeability and are more susceptible to clogging and will, therefore, limit the applicability of infiltration. LID projects in areas with these soils should focus on conveyance, detention, and filtration practices and must be designed to drain without relying on infiltration. All potential project locations should have a geotechnical report that yields permeability information for at least 10 feet below the bottom of the proposed improvements.

Hardpan Condition

Infiltration strategies will also be affected by the hardpan condition found throughout much of the Riverbank area (see Figure 8). The hardpan, a thick layer of dense soil found beneath the topsoil layer, is most likely very impervious and will require special design considerations. In locations of hardpan, there exists the possibility to break up the hardpan and install rock wells or other methods to convey treated stormwater below the hardpan layer. The general strategy for considering infiltration within a hardpan area is as follows:

- If the depth to hardpan, as measured from the bottom of the BMP, is greater than 10 feet, infiltration is acceptable.
- If the depth to hardpan is less than 10 feet and the hardpan thickness is 4 feet or less, infiltration is acceptable if soils below the hardpan are well draining and rock well is installed through hardpan.
- If the depth to hardpan is less than 10 feet and the hardpan thickness is greater than 4 feet, infiltration is not acceptable.
- Separation of 10 feet between the bottom of the infiltration BMP or rock well and the groundwater surface elevation is also necessary.

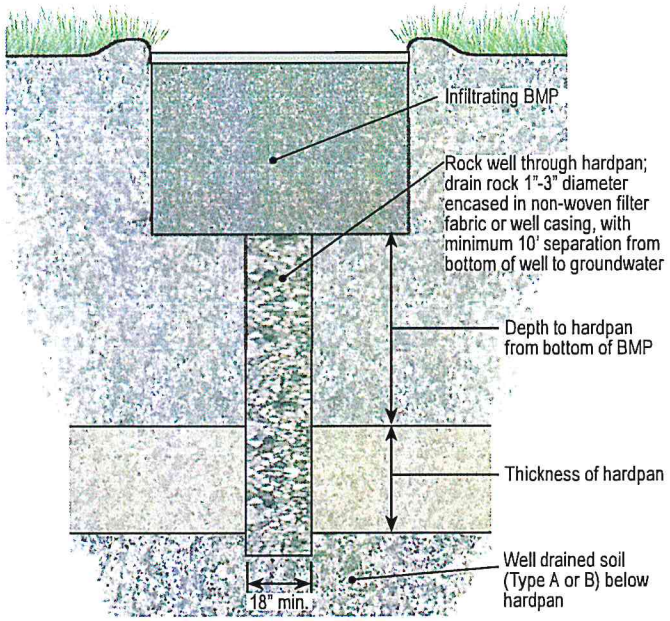


Figure 6: Typical rock well installed beneath an infiltrating BMP in an area with a hardpan layer close to the surface that is less than 4 feet thick.

1 Section 303(d) of the CWA requires that regulatory agencies determine the amount of specific pollutants that can be assimilated by water bodies which do not meet water quality standards. Pollutants must be accounted for from point sources, nonpoint sources, and natural background sources.

2 Soils classified as Group A (gravel, sand, sandy loam) are highly permeable and produce the least surface runoff; Group B soils (silt loam, loam) have good permeability; Group C soils (sandy clay loam) offer fair to poor drainage characteristics; and Group D soils (clay loam, sandy clay, silty clay, clay) have very little infiltration potential and produce the greatest surface runoff.

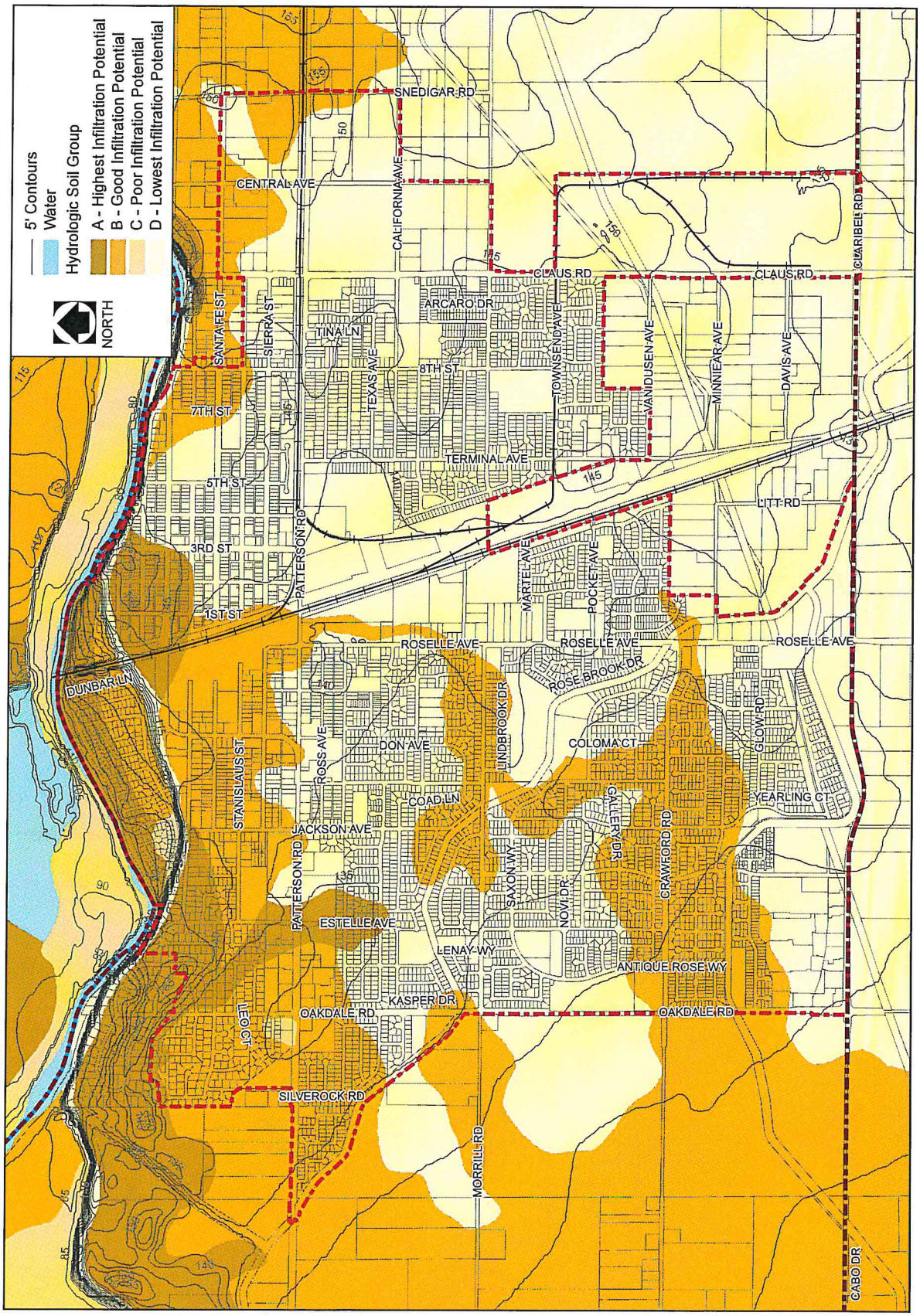


Figure 7: Soils Map (Source: NRCS 2011)
Map of entire Riverbank Planning Area located in Appendix C

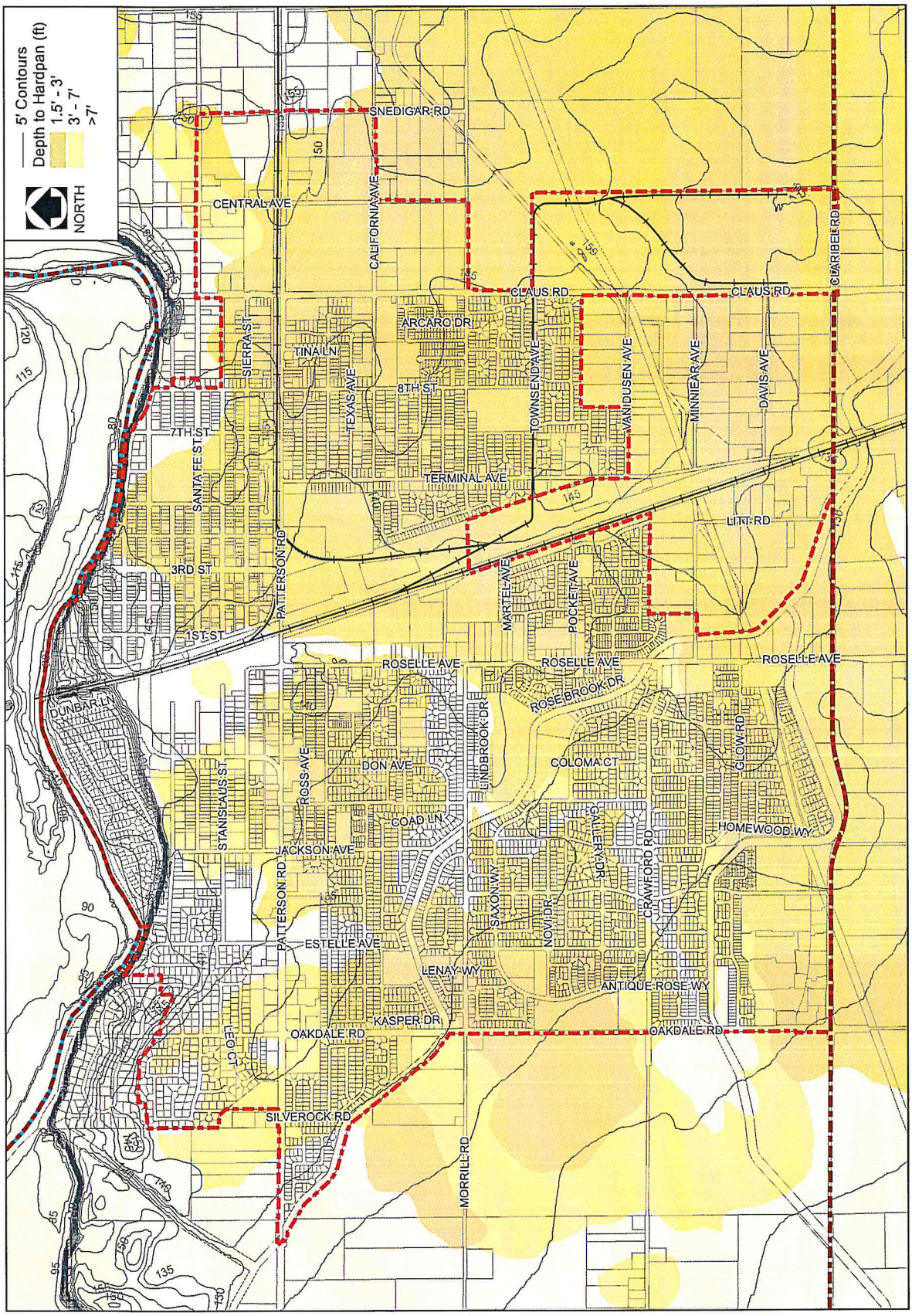


Figure 8: Depth to Hardpan Layer Map (Source: NRCS 2011)
Map of entire Riverbank Planning Area located in Appendix C

Space Limitations

Another factor to consider when selecting BMP features is site configuration and available space. Some BMPs require more surface area than others. Therefore, it is important to evaluate the amount of space available and the best way to balance development goals and stormwater requirements.

If the characteristics of the site allow infiltration, consider piping runoff to underground infiltration systems, which can be located beneath many different surface types, or converting hardscape areas to permeable pavement. These systems can result in very little need to modify the layout or programming of a site, while still providing water management benefits. Similarly, a thin infiltration trench that is long and deep can provide the same function as a detention basin or wetland, only in a much smaller footprint.

Another strategy is to integrate numerous dispersed bioretention area cells into small open spaces on the site and strips of landscaping in the street. By locating many small areas throughout a project, runoff is captured and treated almost immediatly. This allows the runoff to then be routed to existing infrastructure and eliminates the need for a larger facility to handle collected flows.

BMP Selection Matrix

The table below is intended to provide a quick and convenient method of identifying which BMPs are most appropriate for use on a given site. The left-hand column contains a list of questions that identify a possible site constraint. For any question answered "yes" the project should consider the BMPs marked with a green box, with any additional requirements for using a BMP listed within the green box.

For example, consider a site with a high groundwater table (less than 10' to the bottom of BMPs), steep slopes of around 6%, and Type C soils (but not located in a floodplain, having no hardpan layer, and with adequate space). The BMPs which are appropriate for this location are bioretention areas (if terraced and installed with a liner and underdrain), rainwater harvesting, and green roofs.

Constraint	Underground Infiltration	Bioretention Area	Vegetated Swale	Filter Strip	Vegetated Basin	Constructed Wetland	Permeable Pavement	Rainwater Harvesting	Green Roof
Located in floodplain?									
Less than 10-foot separation to groundwater table?		With liner and underdrain	With liner		With liner		With liner & underdrain (provides no treatment)		
Sited on steep slope (5-15%)?		If terraced	If installed along contour						
Sited on very steep slope (>15%)?									
Soil type C or D?		With underdrain					With underdrain (provides no treatment)		
Less than 10-foot separation to thin (<4') hardpan layer?	With rock well	With underdrain or rock well					With underdrain or rock well		
Less than 10-foot separation to thick (>4') hardpan layer?		With underdrain					With underdrain (provides no treatment)		
Limited space for BMP facilities?			With adequate length						

Figure 9: BMP Selection Matrix

3.0

Stormwater BMP Design

The use of LID techniques can aid in addressing the water quality and hydrologic issues that are typically exacerbated by development. When planning and designing new development and redevelopment the goals of LID and requirements of the MS4 Permit should be incorporated and promoted. These site design goals include:

- conserve natural areas and drainages;
- minimize impervious surfaces, drain to pervious area;
- minimize soil compaction;
- mitigate peak runoff and associated erosion; and
- treat runoff in stormwater BMPs.

There are a number of BMPs recommended for use in the City and surrounding areas. These facilities, along with sizing criteria and design recommendations, are detailed in this section.

BMP Sizing Criteria

Treatment control BMPs, which provide post-construction water quality benefits, are most efficient and economical when they target the frequent, small storm events that produce the majority of annual rainfall. Larger, more intense storms are the basis of design for conveyance and flood control facilities, but there are only marginal improvements to runoff water quality when BMPs are designed to this standard.

The NPDES permit specifies that BMPs for treatment of stormwater pollutants should be sized to either a flow-based or volume-based standard, or both. The permit lists three methods for volume-based sizing and two methods for flow-based sizing, summarized below.

Volume-based BMPs must be sized for:

- The volume of annual runoff based on unit basin storage water quality volume, to achieve 80% or more volume treatment by the method recommended in California Stormwater BMP Handbook (2003); or
- The 85th percentile 24-hour runoff event, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998); or
- The runoff volume produced from a historical-record based reference 24-hour rainfall criterion for "treatment" that achieves similar pollutant reduction to the 85th percentile 24-hour runoff event.

Flow-based BMPs must be sized for:

- The flow produced from a rain event equal to at least twice the 85th percentile hourly rainfall intensity; or
- The flow that will result in treatment of the same portion of runoff as treated using volume-sizing.

Methods for sizing flow and volume-based BMPs are explained on the following page.

Larger or more complicated projects may benefit from the use of continuous simulation modelling in lieu of these simplified methods; there are numerous software package available which provide this functionality.

Flow-Based Sizing

Flow-based BMPs must be designed to carry or process the runoff resulting from the targeted water quality rainfall under flow conditions that promote treatment (specific to each BMP, but generally low velocity and minimal flow depth). The water quality flow (WQF) is the flow of runoff produced by a rain event equal to twice the 85th percentile hourly rainfall intensity, based on local rainfall data. For the Riverbank area, the 85th percentile hourly rainfall intensity is approximately 0.10 inches per hour[1], resulting in a design rainfall intensity of **0.20 in/hr.**

To calculate the required treatment flow, first determine the size of the drainage area contributing runoff to the BMP and the composite stormwater runoff coefficient[2] for that drainage area. The rational method can then be used to calculate the flow rate:

$$WQF = C \times i \times A = 0.20 \times C \times A$$

Where:

- WQF = water quality flow (cfs)
- C = composite runoff coefficient for drainage area (unitless)
- i = design rainfall intensity (0.20 in/hr)
- A = drainage area (acres)

1 Based on California State University, Sacramento Office of Water Programs' Basin Sizer, Version 1.45 (2007).

2 Standard runoff coefficients for different land use types can be found in Section 4.3 of the City of Riverbank Storm Drain System Master Plan (2008).

Volume-Based Sizing

Volume-based BMPs must be designed to capture and treat 80 percent or more of the annual runoff volume, determined using the methodology recommended in the CASQA California Stormwater BMP Handbook. The water quality volume (WQV) to which a BMP must be sized is based on the drainage area's unit basin storage volume, determined from local rainfall data and site characteristics. A volume-based BMP must also be designed to release this volume (typically through an orifice or via infiltration) within an acceptable drawdown time (generally 24-48 hours).

To calculate the required treatment capture volume, first determine the size of the drainage area contributing runoff to the BMP and the composite stormwater runoff coefficient for that drainage area. The Unit Basin Storage Volume (UBS) for the drainage area is determined from the sizing curve for 80% capture; find the composite runoff coefficient of the drainage area on the x-axis, follow it up until it intersects the line representing the desired drawdown time, and read the corresponding UBS value from the y-axis. Calculate the treatment volume by multiplying the UBS by the drainage area (convert to more convenient units, such as cubic feet or gallons, for use during design):

$$WQV = UBS \times A$$

Where:

- WQV = water quality volume
- UBS = Unit Basin Storage Volume (inches)
- A = drainage area (acres)

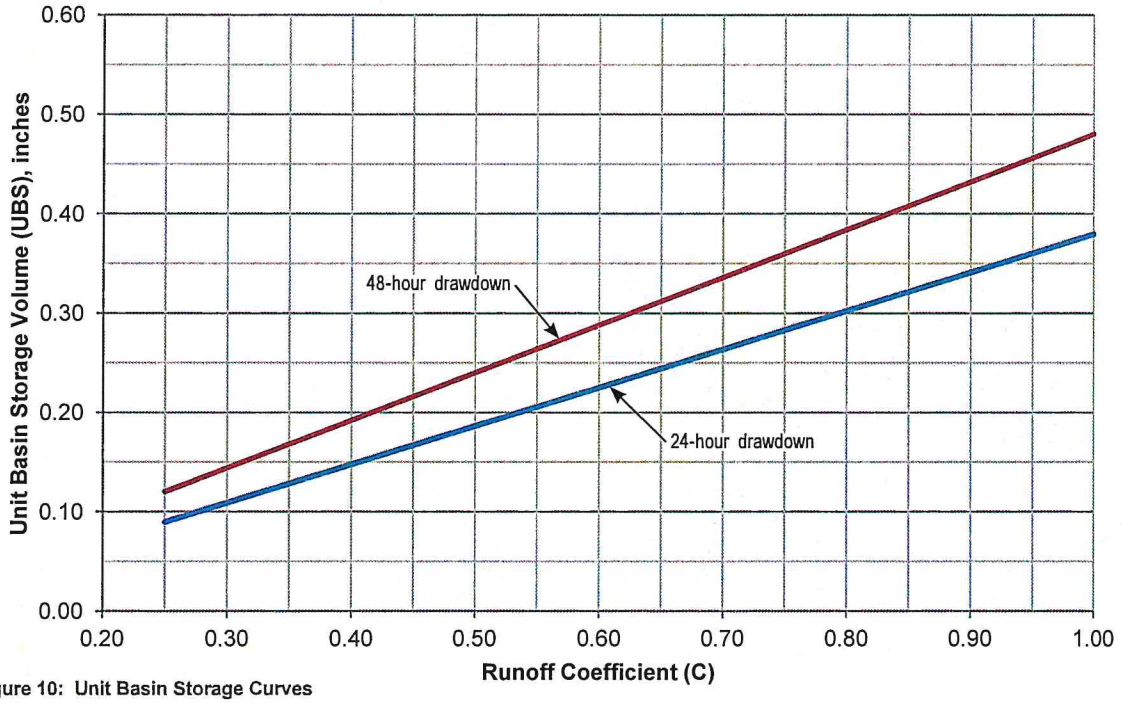


Figure 10: Unit Basin Storage Curves

BMP Fact Sheets

Detailed information on the stormwater facilities recommended for LID design in the Riverbank area are included in the BMP fact sheets which follow. Each fact sheet contains a description of the BMP, a retrofit opportunity example, technical design criteria, plant selection recommendations, and a list of benefits, constraints, and siting applications. This information is intended to aid in selecting, placing, and designing the various BMPs. Some of the BMPs (in particular constructed wetlands, rainwater harvesting systems, and green roofs) will likely require prior experience or more detailed guidance to develop a design appropriate for construction.

BMP	Sizing Method	Other Sizing Criteria
Underground Infiltration	WQV	Drawdown time
Bioretention Area	WQV or WQF	Drawdown time
Vegetated Swale	WQF	Residence time, flow speed, flow depth
Filter Strip	WQF	Flow speed, flow depth, tributary width
Vegetated Basin	WQV	Drawdown time
Constructed Wetland	WQV	Drawdown time
Permeable Pavement	WQV	Drawdown time
Rainwater Harvesting	WQV	Drawdown time
Green Roof	WQF	Roof-based system

Sediment Forebay

Stormwater treatment facilities, especially those designed to treat catchment areas that are larger or have higher anticipated pollutant loads, benefit from pretreatment. One simple and effective pretreatment component is a sediment forebay, which helps prevent clogging of BMPs, eases maintenance requirements (such as easier cleanup of collected trash and debris), and can also be used to provide peak flow storage. A sediment forebay is a small basin located at the incoming discharge point or just upstream of a BMP. The forebay allows sediment to settle out and trash/debris to collect prior to runoff reaching the primary treatment area.



Tree-well Filter

Tree-well filters are systems which utilize one or more precast concrete chambers filled with engineered bioretention media. Stormwater is directed into the chambers and receives treatment as it flows through the filter media and then is collected and released by a perforated pipe. Proproprietary systems are available which are designed for efficient pollutant removal at high flow rates and thus have a relatively small footprint compared to other LID facilities. Their unique attributes make tree-well filters suitable to almost any site, however, City approval must be obtained in order to utilize these devices.



Note: Image courtesy of Filterra Bioretention Systems. Proprietary systems are included for representative purposes only and are not an endorsement of any specific product.

BMP Selection Guide

There are three major goals to managing stormwater on-site: (1) to *improve the quality* through treatment; (2) to *reduce the quantity* through retention (permanently stays on-site); and (3) to *reduce the peak flow* through retention or detention (temporarily stays on-site).

An ideal site design would utilize BMPs that provide all three. The BMPs would not only improve the quality of the storm water through treatment, but also reduce the quantity and peak flow by permanently retaining the storm water on-site through infiltration or reuse. Due to site constraints, this is not always feasible. See the BMP Selection Matrix and Infiltration Feasibility section for more details. The most constrained sites will only improve the quality and reduce the peak flow through treatment and detention. The table below is provided as a guide to determine what mechanisms each BMP provides.

Treatment + Retention	Treatment + Detention	Treatment [3]
• Bioretention w/o underdrains [1]	• Bioretention w/ underdrains	• Vegetated Swale
• Permeable Pavement w/o underdrains [1]	• Permeable Pavement w/ underdrains	• Filter Strip
• Vegetated Basin [1]	• Vegetated Basin w/ liner	
• Underground Infiltration [1]	• Green Roof [2]	
• Constructed Wetlands [1,2]		
• Rainwater Harvesting [2]		

1 These BMPs require infiltration, see section on Infiltration Feasibility.

2 Careful consideration should be given to the higher design, implementation, and maintenance costs of these BMPs.

3 Though some infiltration may occur within these flow-based systems, they do not significantly reduce the total volume. However, they are good options for reducing the peak velocity of stormwater.

Infiltration Feasibility

Typically, the preferred method of draining any stormwater BMP is through infiltration to the underlying subgrade soils. This allows for maximum treatment ability, groundwater recharge, and reductions in stormwater volume. Infiltration is not always possible though, as there are a variety of site constraints that can impede or prohibit the implementation of this function.

The table below summarizes the general parameters a site must meet in order for infiltration to be used and/or relied upon as a treatment or discharge method. More explanation of these contraints can be found in Section 2, and information on design considerations can be found in the BMP Fact Sheets which follow.

Site Constraint	Acceptable Condition
Hydrologic Soil Group	Type A or B
Soil infiltration rate	0.5 in/hr minimun
Slope	Less than 5% [2]
Separation from hardpan layer [1]	10-foot minimum (no minimum for thin hardpan with rock well installed through to underlying soils)
Separation from groundwater table [1,2]	10-foot minimum
Setback from buildings foundations [2]	10-foot minimum
Setback from drinking water wells [2]	100-foot minimum
Soil or groundwater contamination [2]	Not allowed

1 The acceptable 10' separation is based on a statewide standard and is a conservative criteria to minimize risk. Available information from NRCS does not provide any resolution of hardpan and groundwater data for depths greater than about seven feet, therefore geotechnical investigation will be necessary to determine actual depth.

2 BMPs with less than the minimum separation to groundwater, setback to foundations and wells, or in contaminated soils must be lined with an impermeable liner to protect those elements. Other constraints generally require the installation of an underdrain or orifice for primary drawdown of captured stormwater.

3 Specific site conditions or well developed designs will present exceptions to this. For example, terraced bioretention designs can accomodate slopes up to 15%.

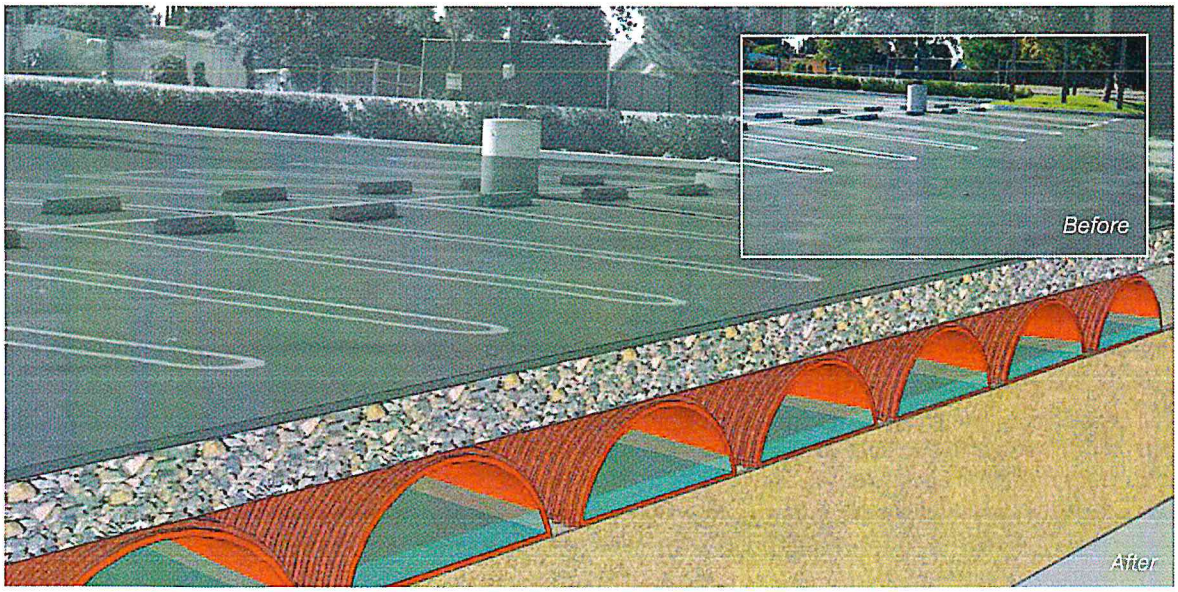
UNDERGROUND INFILTRATION

These systems can take different forms but provide identical function: controlled discharge of stormwater through infiltration. The primary pollutant removal mechanism of this practice is filtering through the native soil. An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff from upstream areas. A dry well is a small rock-filled pit that usually receives runoff from rooftops or other impervious areas with low sediment loading. Water is stored in the void space between the stones and percolates through the underlying soil matrix. If high sediment loads are expected, pretreatment is desirable to reduce the maintenance burden.



Underground infiltration systems can be integrated into a site to enhance and diversify the landscaping, in addition to providing stormwater improvements.

Retrofit Opportunities



Benefits

- Reduces runoff volume and attenuates peak flows
- Improves water quality - good for removing fine sediment and adsorbed pollutants
- Enhances groundwater recharge and contributes to stream base flow
- Minimal surface space requirements; located underground and thus visually unobtrusive
- Low construction and maintenance costs

Potential Constraints

- Requires permeable subgrade soils, not recommended for impermeable soil Types C or D
- Requires groundwater separation
- Contributing area should generally be less than 5 acres
- Not suitable on fill sites, steep slopes, contaminated soils, industrial sites, or sites where spills are likely to occur
- May encounter siting challenges in urban retrofit areas due to foundation setback and poor soil conditions

Siting Applications

- Mixed-use and commercial
- Roads and parking lots
- Parks and open spaces
- Single and multi-family residential

Technical Information

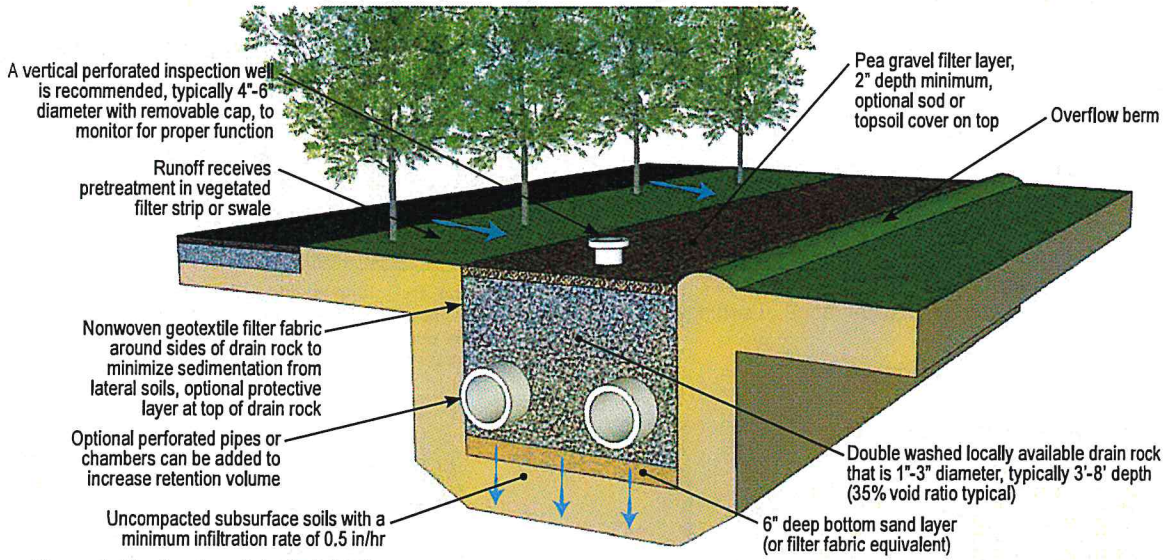


Figure: Infiltration trench typical detail

Design & Sizing Criteria

- Infiltration facilities are volume-based systems sized to capture the WQV within the void space of the storage layer and should infiltrate all stored runoff into the subsoils within a maximum 72 hour drawdown time.
- Requires a minimum subgrade soil infiltration rate of 0.5 in/hr minimum. If soil infiltration rates exceed 2.5 in/hr, runoff should be fully treated (with one or more upstream BMPs) prior to infiltration to protect groundwater quality.
- Requires a 10 foot minimum separation from the bottom of the facility to the seasonally high groundwater elevation.
- Should be placed a minimum of 10 feet from building foundations and 100 feet from drinking water wells.
- Should be installed with a flat bottom to promote uniform infiltration.
- To help prevent clogging and ease maintenance, it is important to provide upstream pretreatment (using filter strips, swales, forebays, or manhole sumps) to remove coarse sediment, particles, and oils.
- If possible, system should be designed to avoid classification as a Class V injection well, which requires submission of an inventory form to the EPA. A Class V injection well is deeper than it is wide.
- If infiltration is not possible, can be installed with an orifice to provide flow and volume control functions without any water quality treatment.

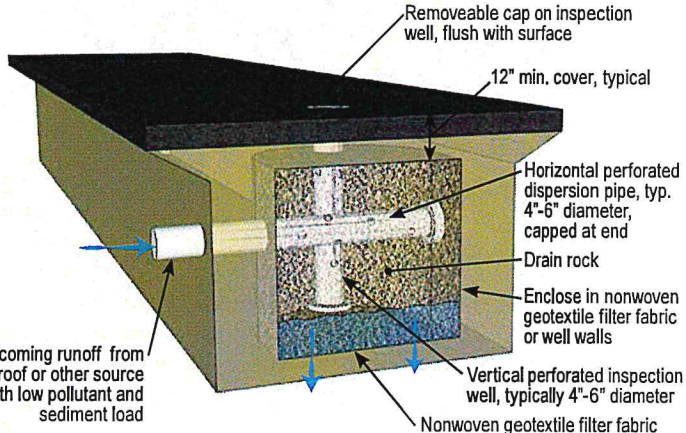


Figure: Dry well typical detail

Proprietary Systems

There are many retention systems designed to maximize subsurface capture volume and that include components for pretreatment and flow control.



Cudo Cubes are an example of a typical modular block system.

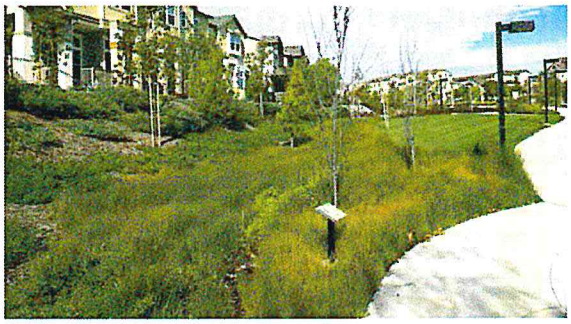


Triton stormwater chambers are a typical semi-circular linked chamber system.

Note: Proprietary systems are included for representative purposes only and are not an endorsement of any specific product.

BIORETENTION AREA

Bioretention areas are shallow, landscaped areas that receive and treat stormwater. Runoff is allowed to pond on the surface of the bioretention area, typically less than a foot deep, where it can then filter through a vegetative layer and engineered soil media to remove sediment and pollutants. In locations of well drained subsoils, the water may then infiltrate into the subgrade. At sites or locations that will not allow for infiltration, flow-through systems are required; underdrains are installed beneath the planting soil to drain the facility and release the treated water to a conveyance feature or storm drain system. Bioretention areas are very versatile facilities that can fit a wide range of settings.



Bioretention areas are among the most common LID techniques implemented, often in highly visible locations, and can be a valuable educational opportunity especially if signage is installed illustrating function, intent, or native plants.

Retrofit Opportunities



Benefits

- Applicable to a wide range of sites and layout, easily integrated into urban retrofit projects
- Provides reliable water quality function and facilitates evapotranspiration
- Attenuates peak flows; reduces runoff volume and recharges groundwater when infiltration possible
- Provides greening and reduces heat island effect in urban areas
- Provides aesthetic amenity and creates habitat

Potential Constraints

- Infiltration design requires sufficiently permeable soils, depth to groundwater/hardpan; underdrain system increases cost and infrastructure
- Vegetation requires maintenance
- Maintaining desired aesthetics may require dry season irrigation
- Should not receive more than about 1 acre of runoff; divide larger watersheds among dispersed cells

Siting Applications

- Residential yards
- Office and commercial storefronts
- Roadway medians, bulb-outs, and traffic circles
- Parking lot islands, cul-de-sacs
- Parks and other landscaped areas

Other Names: Raingarden, Bioretention Cell, Bioretention Swale, Dry Swale, Flow-Through Planter

Technical Information

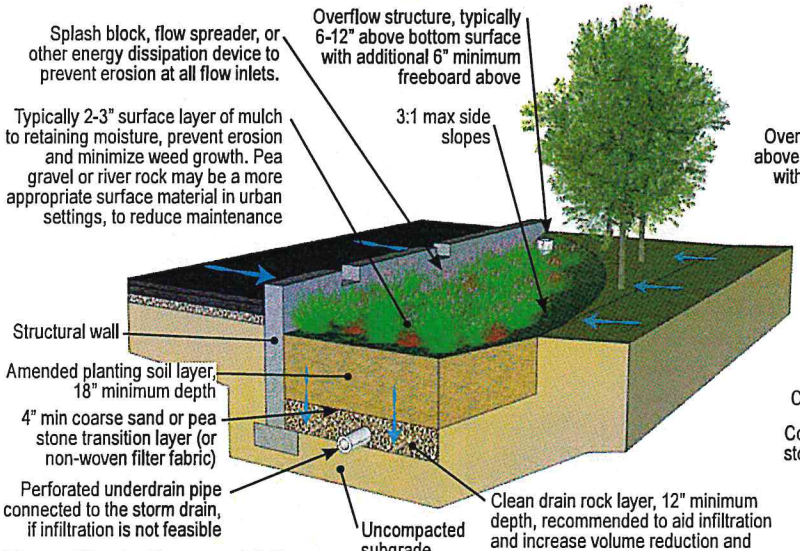


Figure: Bioretention area detail, showing hard edge and soft edge

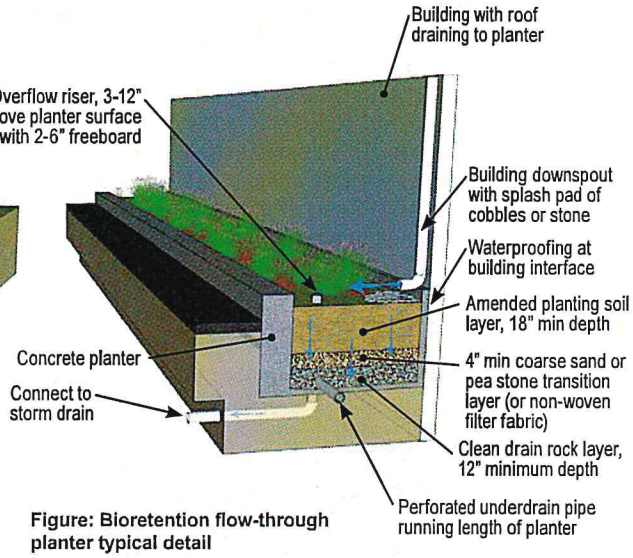


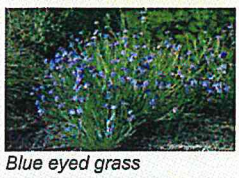
Figure: Bioretention flow-through planter typical detail

Design & Sizing Criteria

- Bioretention areas can be sized as either volume-based or flow-based systems (or a combination).
- Volume-based systems are sized to capture the WQV within the surface ponding area and void space of the drain rock storage layer and should release all captured runoff within a maximum 48 hour drawdown time (either by subgrade infiltration or through an underdrain).
- Flow-based systems are sized to percolate the WQF through the bottom of the facility. The surface area of the system multiplied by the infiltration rate of the planting media (which should be considered as 5 in/hr for design) must equal or exceed the WQF. The subgrade infiltration rate must be high enough to process this flow as well, or an underdrain is necessary.
- Reliance on subgrade infiltration requires a minimum soil infiltration rate of 0.5 in/hr, in addition to the above requirements. Within impermeable soils (Type C and D), an underdrain should be installed.
- If the separation from the bottom of the facility to the seasonally high groundwater elevation is less than 10 feet then an underdrain should be installed, with an impermeable liner placed beneath all system media.
- Infiltrating bioretention systems should be placed a minimum of 10 feet from building foundations and 100 feet from drinking water wells.
- Pretreatment (vegetated buffer strip, swale, sediment forebay) can improve function and ease maintenance.
- Runoff from storms larger than the water quality event are ideally diverted to the storm drain system.

Plant Selection *(See Appendix A)*

Plants should be suitable for periods of inundation during the rainy season. Vegetation should be drought-tolerant, especially at the edges, but may require irrigation during initial establishment or dry periods. Trees require more intensive maintenance, and may show limited growth.


Blue eyed grass


Desert baccharis


California rose


San Diego sedge

VEGETATED SWALE

Vegetated swales are shallow stormwater conveyance channels with vegetation covering the side slopes and bottom. Treatment occurs as runoff flows through the vegetation and infiltrates into the soil matrix. Swales can be designed as part of the stormwater conveyance system and can eliminate the need for some curbs, gutters and storm drains. They are also well suited to treat runoff from roads and highways because of their linear nature. The treatment effectiveness is correlated to the residence time of the runoff in the swale, and therefore, flow-based swales tend to be considerably longer than other types of treatment BMPs.



Vegetated swales, such as this installed in a parking lot, can both treat and convey runoff, eliminating the need for some catch basins and pipes.

Retrofit Opportunities



Benefits

- Can convey stormwater, including within street right-of-way
- Low installation and maintenances costs
- Reduces peak flows and velocity compared to concrete or piped conveyance
- Improves water quality, depending on site constraints, by removing sediment, suspended solids, and trace metals
- Vegetation provides aesthetic benefit and reduces the heat island effect in urban areas

Potential Constraints

- Larger space requirements than traditional conveyance methods
- Requires regular vegetative maintenance and trash removal
- Can be difficult to locate in retrofit applications
- Not suitable for areas with steep slopes or highly erodible soils
- Limited to relatively small drainage areas, generally less than 5 acres
- Limited volume reduction and peak flow attenuation, unless designed with check dams

Siting Applications

- Road shoulders and medians
- Parking lot islands
- Commercial, industrial, and residential developments
- Open space and parks

Other Names: Treatment Swale, Grassy Swale, Rock-lined Swale, Bioswale

Technical Information

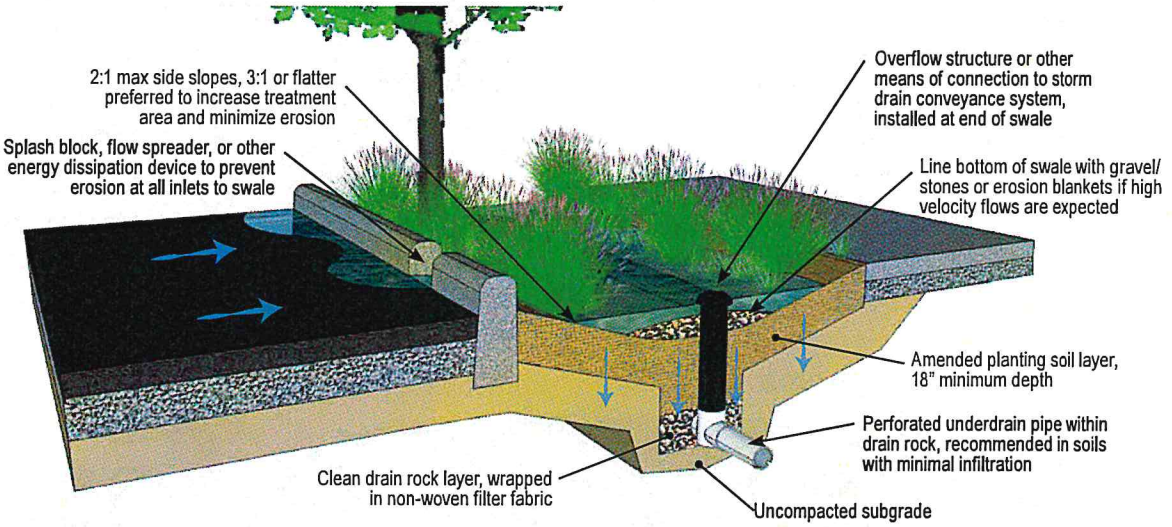


Figure: Vegetated swale typical detail

Design & Sizing Criteria

- Swales are flow-based systems sized to convey the WQF at a flow velocity not exceeding 1 foot per second and maximum water depth not exceeding the lesser of 6 inches or 2/3 of the vegetation height.
- Swales must provide a minimum of 10 minutes of stormwater residence time for pollutant removal, with a minimum length of 100 feet.
- The preferred longitudinal slope is 1-2% to limit flow velocity. Check dams placed across the flow path can promote additional infiltration and flow reduction, and should be used for longitudinal slopes exceeding 5%.
- Swales should generally have a trapezoidal or parabolic shape to promote even flow across the whole width of the swale. The bottom width should be between 2 and 10 feet.
- A dense and well maintained vegetative cover on the swale bottom and side slopes filters pollutants out of runoff and helps reduce flow velocities and protect the swale from erosion. Stones or gravel may also be used on the bottom to protect against erosion.
- Vegetated swales that are primarily designed to detain runoff (behind check dams or due to layout) should be considered bioretention facilities and designed accordingly.
- Most effective on soils that allow infiltration. In impermeable soils, installing well-drained planting media with an underdrain beneath is recommended.

Plant Selection *(See Appendix A)*

Riverbank receives little precipitation and has a long dry period in the summer, so flow will be irregular and plants must be chosen accordingly. Periodically the swale will experience high flows and plants should be chosen with well established roots to protect against erosion, and the ability to withstand inundation.


Purple needle grass


Hummingbird trumpet


Bush monkey flower


Western meadow sedge

FILTER STRIP

Filter strips are vegetated surfaces that are designed to treat sheet flow from adjacent surfaces. Filter strips function by slowing runoff velocities and allowing sediment and other pollutants to settle and by providing some infiltration into underlying soils. Filter strips are most effective when runoff passes over the filter surface as shallow, uniform sheet flow. They can suffer erosion and lack of treatment if exposed to concentrated flows. They are well suited to treat runoff from adjacent roads or small parking areas and are good for use as vegetated buffers between developed areas and natural drainages.



Filter strips can be as simple as a gentle slope covered in grass that receives runoff from an adjacent strip of parking stalls.

Retrofit Opportunities



Benefits

- Low construction cost and minimal maintenance requirements (generally just erosion prevention and mowing)
- Can provide reliable water quality benefits if properly designed, vegetated, and maintained
- Good for roadside shoulders and landscape buffers when slope and length criteria are met
- Simple, aesthetically pleasing landscape feature
- Easy to customize to varying site conditions

Potential Constraints

- Not appropriate for industrial sites or locations where spills may occur
- Limited ability to treat large drainage areas
- Water quality benefits severely limited without adequate filter length and flow characteristics
- Does not provide significant stormwater volume reduction
- Only minor reduction in flow rate, especially during larger storms
- May require dry season irrigation

Siting Applications

- Roads and highway shoulders
- Small parking lots
- Residential, commercial, or institutional landscaping
- Pretreatment component for subsequent BMP

Other Names: Vegetated Buffer Strip, Rock Filter Strip, Flow-Through Landscaping

Technical Information

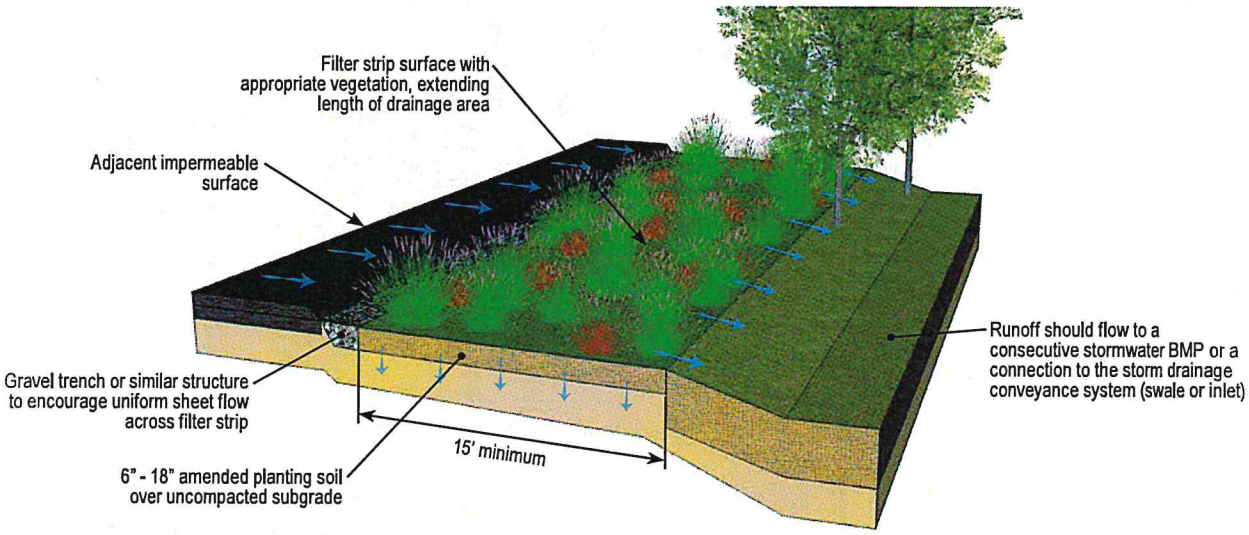


Figure: Filter strip typical detail

Design & Sizing Criteria

- Filter strips are flow-based systems designed to convey the WQF across the vegetated surface at a flow velocity not exceeding 1 foot per second and maximum water depth not exceeding 1 inch.
- Should be at least 15 feet wide and preferably 25 feet wide (in the direction of flow) to provide adequate water quality treatment.
- Filter strips are considered effective at treating contributing impervious surface widths up to twice the width of the vegetated strip. The maximum length (in the direction of flow towards the filter strip) of the contributing tributary area should be 60 feet.
- Should be immediately adjacent to, and extend the full length of, the contributing drainage area.
- Ideal cross-slope is between 2% and 6% to avoid ponding (at low slopes) and concentrated flows (at high slopes). Slopes up to 15% may be acceptable with proper design and careful maintenance, but are generally not recommended.
- If the cross-slope is less than 0.50%, or if the underlying soil infiltration rate is less than 0.5 in/hr, consider an underdrain system to facilitate drainage.
- Requires shallow, evenly-distributed sheet flow across the entire width of the strip. Level slopes perpendicular to the direction of flow are required to achieve sheet flow.
- A level spreading feature such as a gravel trench may help promote sheet flow, however if used it must be carefully maintained.

Plant Selection *(See Appendix A)*

The filter area should be densely vegetated with native grasses, shrubs, and trees that effectively bind the soil. The thicker and more uniform the plant cover, the greater the stormwater management benefits.


California encelia


Wild rye


California sagebrush


San Diego sedge

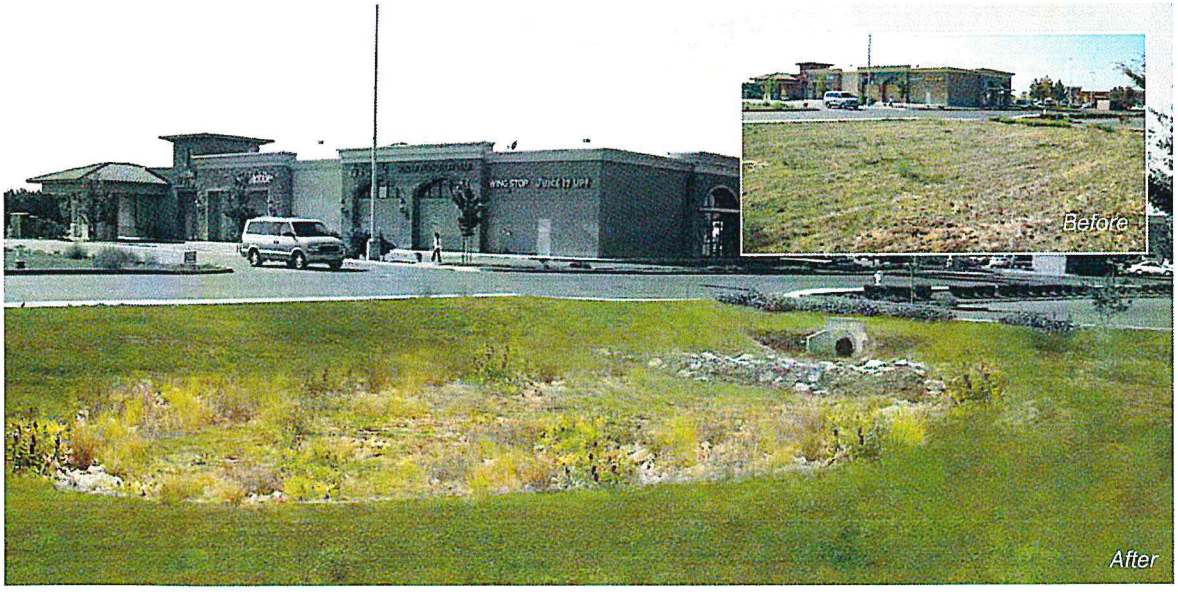
VEGETATED BASIN

Vegetated basins are temporary holding areas for stormwater that capture and detain flows from a water quality design storm for some minimum time (e.g. 48 hours) to allow particles and associated pollutants to settle. They are typically designed with an outlet structure that slowly releases the water requiring treatment via a small orifice and allows controlled routing of larger events. Water quality drawdown can be achieved through infiltration, if site conditions will allow. Stormwater collected in vegetated basins can be re-used for landscape irrigation, and basins can also be used to provide flood control by including additional flood detention storage.



Basins that are thoughtfully designed and planted can manage stormwater from a larger area, while still offering aesthetic appeal.

Retrofit Opportunities



Benefits

- Relatively low construction and maintenance costs
- Highly effective at attenuating peak flows, can reduce runoff volumes with infiltration or reuse
- Improves water quality by removing particulate matter, sediment, trash, and debris
- Suitable for sites where infiltration is poor or not an option
- Suitable for large drainage areas
- Multi-purpose detention ponds can provide open space, habitat, and aesthetic amenity

Potential Constraints

- Limitations of the release orifice may not allow use of detention in watersheds of less than 5 acres (would require an orifice with a diameter of less than 0.5 inches that would be prone to clogging)
- Only moderate pollutant removal, compared to some other BMPs and ineffective at removing soluble pollutants
- May exhibit undesireable aesthetics due to dry, bare areas and inlet and outlet structures
- Site must have no risk of land slippage if soils are saturated

Siting Applications

- Parks, open spaces, and golf courses
- Commercial, industrial, or residential developments
- Regional detention & treatment

Design Variation

A basin designed with a permanent pool is commonly referred to as a wet pond; additional treatment and amenity benefits can be realized by the body of water, along with maintenance and the need for base flow or supplemental water.

Other Names: Detention Basin, Extended Detention Basin, Detention Pond, Dry Pond, Wet Pond

Technical Information

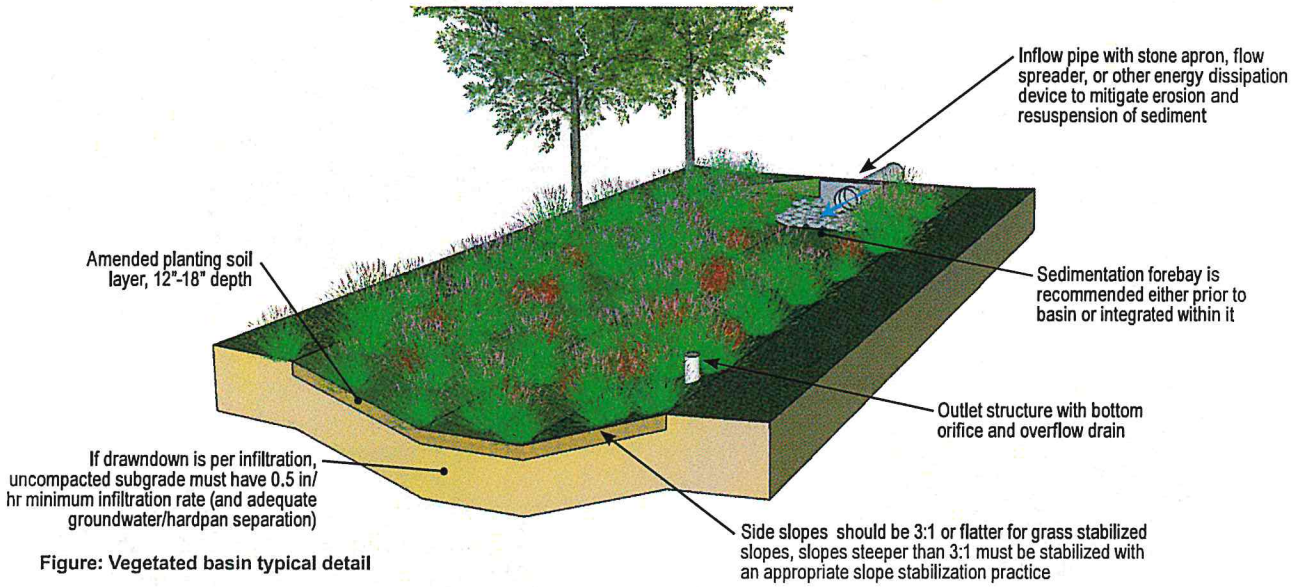


Figure: Vegetated basin typical detail

Design & Sizing Criteria

- Vegetated basins are volume-based systems sized to capture the WQV and discharge it within a typical 48 hour drawdown time, with no more than 50% of the total volume draining in the first 16 hours.
- Longer drawdown times may result in vector breeding, and should be used only after coordination with local vector control authorities. Shorter times should be limited to BMP drainage areas with coarse soils that readily settle or where infiltration is responsible for the majority of drawdown.
- A length to width ratio of at least 1.5:1 (and ideally 3:1) is recommended for greatest treatment capability (due to a longer flow path).
- A reinforced channel from inlet to outlet can be included to convey low flows through the basin.
- Maintenance can be reduced if runoff passes through upstream filtration BMPs or a sedimentation forebay prior to entering the basin.
- Outlet structure(s) include an orifice (and/or infiltration) for drawdown, an overflow drain for storms greater than the design storm, and an emergency spillway/drain for large flood events.
- If the separation from the bottom of the facility to the seasonally high groundwater elevation is less than 10 feet the facility should be lined with impermeable liner (compacted native clay or geomembrane).
- If sufficient space is available, a vegetated buffer around the pond can be used to slow overland runoff entering via the side slopes, help prevent access to the pond if desired, and provide an aesthetic and habitat amenity.

Plant Selection *(See Appendix A)*

Vegetation within the detention zone (up to the elevation of the design storm) increases pollutant removal and decrease resuspension of accumulated sediment. Vegetated detention basins have greater pollutant removal than concrete basins.


Sweet bay


Four wing saltbush


Chuparosa


Blue grama

CONSTRUCTED WETLAND

Constructed wetlands are man-made systems that typically have multiple shallow permanent pools of water at varying depths, incorporating both emergent wetland plants and open water areas. Though possessing less biodiversity than natural wetlands, they still offer significant habitat enhancement and aesthetic value while being optimized for stormwater treatment. These facilities are among the most effective at removing pollutants from stormwater. Constructed wetlands provide water quality benefits through settling, microbial transformation, and plant uptake. Treatment primarily occurs in the root zone and soil media, where nutrients and dissolved pollutants are removed.



Though more technically complex, constructed wetlands have the potential to provide the most water quality improvements of any naturalized system.

Retrofit Opportunities



Benefits

- Effective at removing a broad spectrum of stormwater pollutants
- Reduces stormwater peak flows
- Provides substantial habitat
- Attractive landscape feature, well suited as an open-space amenity
- Good in areas unsuitable for infiltration or with high groundwater table
- Easily customizable to various sizes and dimensions, based on site, budget, and design intent

Potential Constraints

- Occupies relatively large area
- Standing water may represent safety concern
- Mosquito breeding is likely to occur, requiring vector control
- Cannot be placed on steep or unstable slopes
- Base flow or supplemental water source needed in dry season if water level is to be maintained
- Possible aesthetic concerns related to vegetation appearing dead or unkempt in winter and summer

Siting Applications

- Parks, open spaces, and golf courses
- Commercial, industrial, or residential developments
- Regional detention & treatment

Design Variation

A subsurface flow wetland has no open water and runoff is directed beneath the surface through a planted substrate. They generally require less surface area and have fewer vector issues, but may be more expensive to construct and maintain.

Other Names: Stormwater Wetland, Treatment Wetland

Technical Information

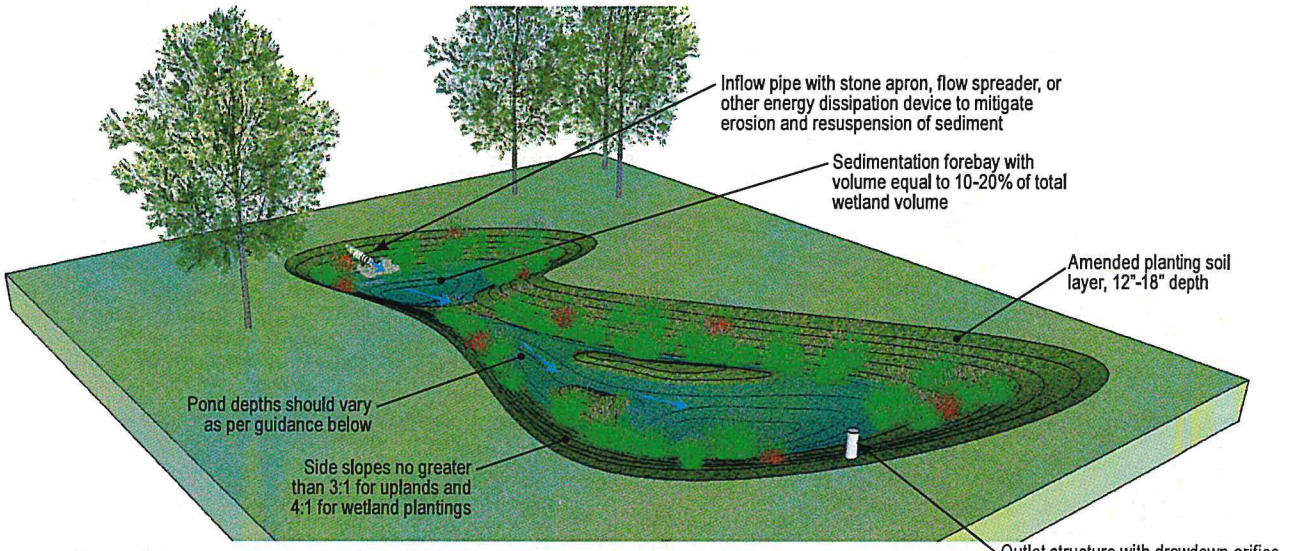
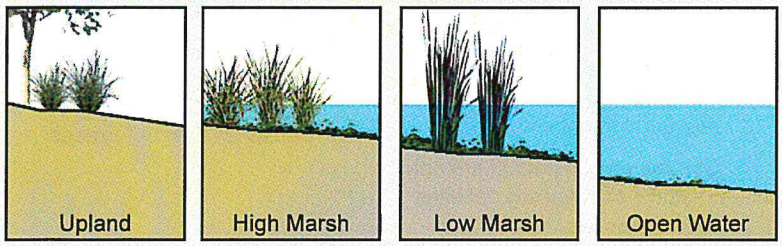


Figure: Constructed wetland typical detail

Design & Sizing Criteria

- Constructed wetlands are volume-based systems sized to capture the WQV and discharge it from the outlet within 24 hours.
- The health of wetland vegetation is integral to the ability of stormwater wetlands to improve water quality. Wetlands should have zones of both very shallow (less than 6 inches) and moderately shallow (6 to 18 inches) standing water to maintain both vegetated and open water areas, with maximum depths of about 5 feet.
- To enhance pollutant removal, wetlands should feature "complex microtopography" in which the underwater surface varies in elevation to increase the length of flow paths for runoff.
- The minimum length to width ratio should be 2:1 though 4:1 is preferred.
- Open water should be occupy 25-50% of the surface.
- Pretreatment, which occurs via settling in a forebay, will greatly aid the function of constructed wetlands. Additional upstream BMPs may also be used to enhance treatment effectiveness.
- Stormwater wetlands require sufficient drainage to maintain a permanent pool, typically at least 5 acres.
- In areas with well draining soils (Type A or B) an impermeable liner may be necessary to maintain standing water.
- Wetlands may intersect the groundwater table, which will help maintain the permanent pool. This should be avoided in areas where stormwater or the groundwater may be contaminated. In these areas, an impermeable liner should be utilized.

Constructed Wetland Zones



Upland	High Marsh	Low Marsh	Open Water
• Edge & small islands	*• Water depth ≤6"*	*• Water depth 6"-18"*	*• Water depth ≤5'*
• 3:1 max side slope	*• 4:1 max side slope*	*• 5:1 max side slope*	*• 25-50% of total area*
• Inundated by runoff	*• May dry in summer*	*• Emergent plants*	

Plant Selection

Wetlands, with their variety of water depths and topography, will require a more diverse and extensive plant palette than other BMPs. Most locations will require plants suitable for prolonged standing water and, due to the permament pool, it is also acceptable to use plants with higher irrigation demand.

PERMEABLE PAVEMENT

Permeable pavement refers to any porous, load-bearing surface that allows runoff to pass through the surface layer and be temporarily stored in a drain rock layer. Ideally, site conditions will allow the subsurface storage layer to drain by infiltration into the subsoils. The permeable pavement system itself will provide some water quality benefits by filtering sediments and some other pollutants, but primarily will reduce peak flows due to detention in the rock layer. Infiltration functions as the primary mechanism for water treatment and volume reduction. Systems which use underdrains will not provide these benefits. When properly constructed, pervious pavements are durable, low maintenance, and have a low life-cycle cost.



Since they replace traditional hard surfaces, permeable pavement is easily integrated into developed areas. The wide variety of surface types provide diverse options for either matching or enhancing the character of an existing site.

Retrofit Opportunities



Benefits

- Assists in attenuating peak flows
- Reduces runoff volume and facilitates groundwater recharge (infiltration-based systems only)
- Easily integrated into existing infrastructure and retrofits
- Reduces the heat island effect
- Can be used as a design element to provide aesthetic benefits
- Construction costs can be equivalent to conventional paving
- Can reduce the need for curbing and storm sewers

Potential Constraints

- Not recommended for roads with high-speed traffic or frequent turning
- Maintenance costs are greater than for conventional paving
- Will require additional maintenance when exposed to regular high-volume traffic
- Storage and infiltration are only effective on relatively flat sites with slopes less than 5%, as level subgrade must be achieved
- Likely not effective as a treatment method if infiltration to the subgrade is not an option

Siting Applications

- Parking lots or parallel parking strips
- Driveways and low traffic roads
- Sidewalks and pathways
- Golf cart paths
- Park hardscape
- Plazas, patios, or terraces

Other Names: Pervious Concrete, Porous Asphalt, Permeable Pavers, Turf Blocks

Technical Information

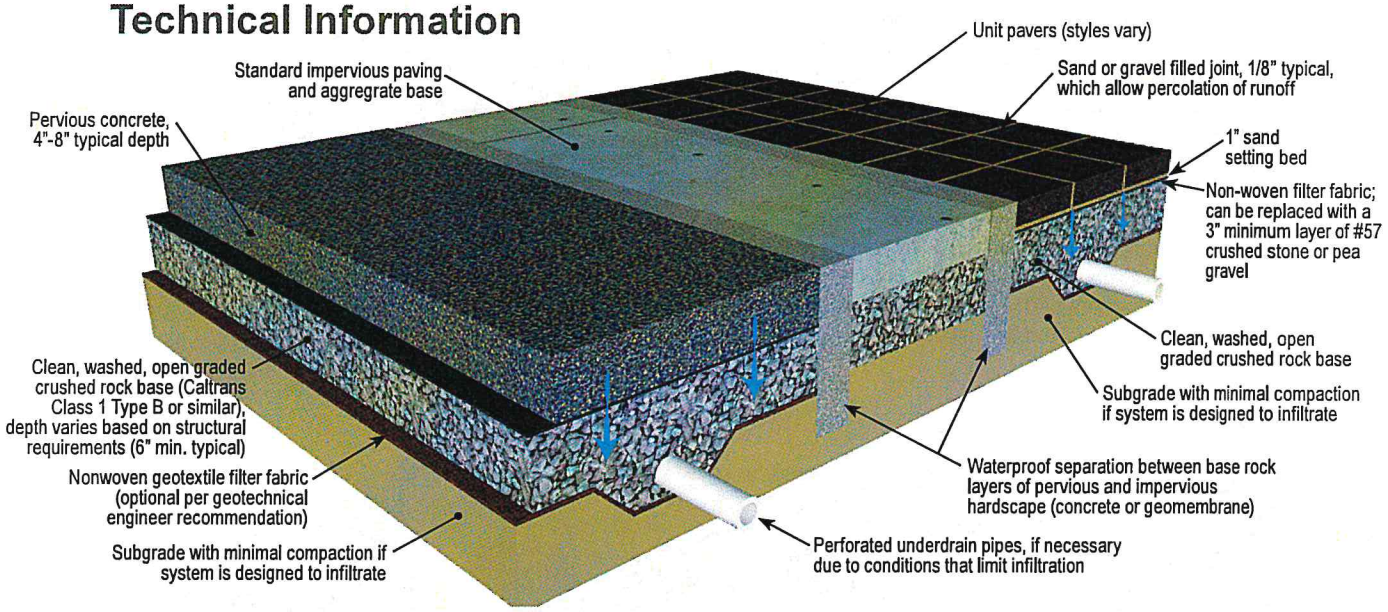


Figure: Pervious concrete and permeable pavers typical details

Design & Sizing Criteria

- Permeable pavements are volume-based systems sized to capture the WQV within the void space of the subsurface storage layer and should fully drain all stored runoff within a maximum 72 hour drawdown time.
- Infiltration-based systems (which provide treatment and volume reduction) must have a minimum subgrade soil infiltration rate of 0.5 in/hr; underdrains should be used in impermeable soils (Types C and D) that do not meet this standard. If infiltration exceeds 2.5 in/hr, runoff should be fully treated with upstream BMPs to protect groundwater quality.
- Infiltration requires a minimum 10-foot separation between the bottom of the drain rock layer and the seasonally high groundwater elevation. For areas with inadequate separation or where the groundwater is contaminated, an underdrain should be used with an impermeable liner placed beneath the rock.
- Infiltration-based systems should be placed a minimum of 10 feet from building foundations and a minimum of 100 feet from drinking water wells.
- Tributary areas should contribute runoff with low levels of sediment to avoid clogging the surface layer. If drainage will come from pervious or un-stabilized areas, appropriate pretreatment measures should be implemented to filter the runoff before reaching the permeable pavement.
- To ensure proper system function, it is essential that permeable pavements (especially poured in place systems) are installed properly by a contractor with prior experience and certification.

Pavement Types

There are several styles of permeable pavement available, including those that are poured in place (such as pervious concrete and porous asphalt) and modular paving systems (such as interlocking concrete pavers, unit stone or brick pavers, or reinforced turf type systems).



Pervious Concrete



Porous Asphalt



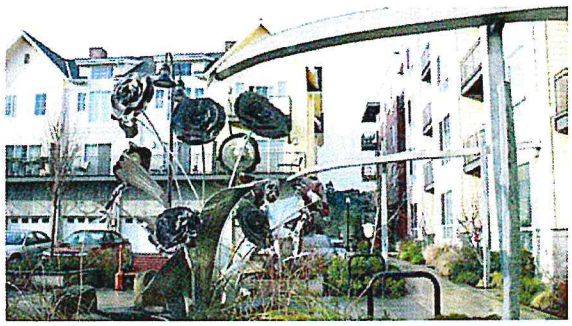
Permeable Pavers



Reinforced Turf

RAINWATER HARVESTING

Rainwater harvesting involves capturing stormwater runoff and then using the stored water for a non-potable application, typically landscape irrigation. Captured runoff can be stored in anything from small rain barrels to large underground cisterns or retention ponds. A distribution system (a pump and/or valves) draws stored water and delivers it to the intended use, routing it through an appropriate treatment system, if necessary. With the right conditions, rainwater harvesting is a very effective stormwater control mechanism, as it provides substantial treatment and volume reduction while also satisfying a portion of the site's water demand.



Harvesting systems can incorporate sculptural or artistic rainwater conveyance components, which serve as aesthetic amenities in addition to making the practice more visible.

Retrofit Opportunities



Benefits

- Pollutant removal rates are nearly 100% for reused water
- Offsets a portion of the potable water required by a site
- Reduces the volume and peak flows of stormwater runoff
- Good for sites where infiltration is not an option
- Easy to apply to rooftop collection; both new buildings and retrofits on existing roofs
- Scalable to large drainage areas, provided demand is adequate

Potential Constraints

- Requires reliable reuse demand high enough to ensure availability of treatment volume in storage
- Lack of summer rainfall coincides with larger irrigation demands
- Often requires infrastructure (pumps or valves) to use stored water, increasing complexity
- Relatively frequent inspection and maintenance is necessary to ensure reliable system function
- Regulatory obstacles may limit reuse opportunities beyond irrigation

Siting Applications

- Collect rooftop runoff
- Golf courses and parks
- Any type of land use, provided adequate end use of water

Technical Information

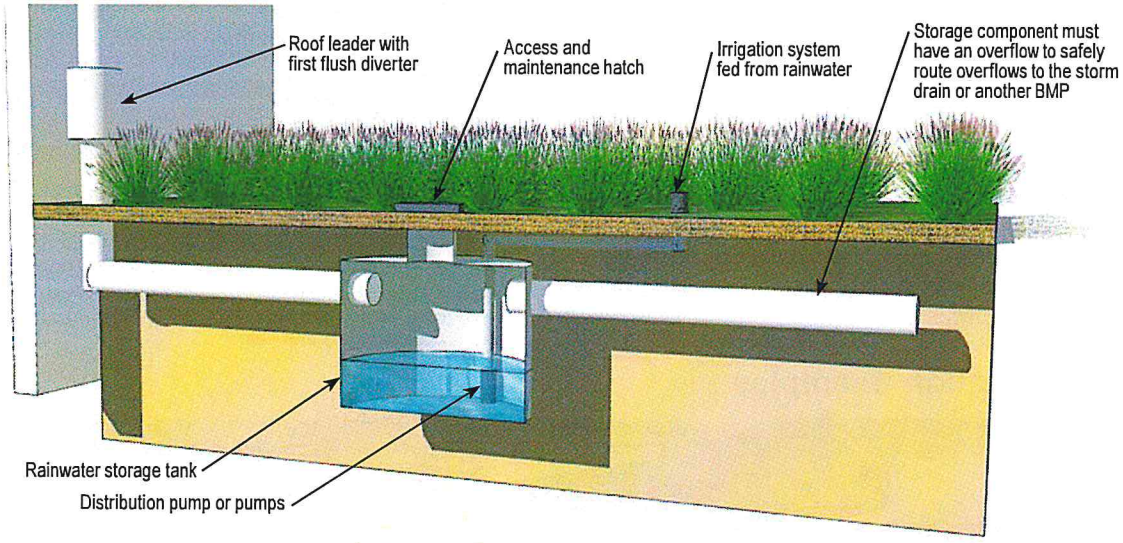


Figure: Rainwater harvesting system typical detail

Design & Sizing Criteria

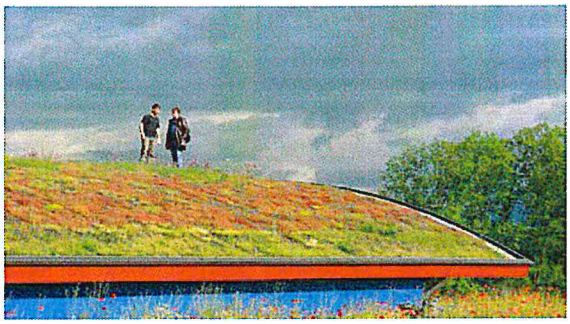
- Rainwater harvesting systems are volume-based systems with adequate capacity available in the storage component to capture the WQV. In order to be used as a water quality treatment device, the operational demand on the system (water use) must be sufficient to free up storage space equal to the WQV within 72 hours of any rain event.
- The seasonal rainfall patterns in Riverbank present difficult circumstances for designing rainwater harvesting systems. Riverbank receives approximately 13 inches of rain annually, with an average of less than an inch falling each month from April through October. This lack of rainfall coincides with the higher irrigation demand of the warmer summer months. It is this mismatch of supply and demand that will inhibit successful implementation of rainwater harvesting for many sites. To provide a noticeable offset to potable water demand will likely require enough storage to capture runoff from a large upstream watershed.
- Components of all rainwater harvesting systems include conveyance (to collect water), storage (to hold water), and distribution (to use water).
- In a typical pumped system, stormwater from a building's roof is conveyed through rainwater leaders into a storage tank. The storage tank is connected to a wet well or suction pump, which is linked to the irrigation system. When the pump receives a signal to deliver water, it will begin operation. When the pump receives a signal to stop (either because irrigation is complete or from a level sensor in the tank indicating that it is nearly empty), it will end operation.
- A supplemental method of supplying water is typically necessary, generally through a valved connection to the traditional water system to either refill the tank or supply irrigation water directly.
- All rainwater harvesting system pipes and fixtures should be labeled "NON-POTABLE WATER, DO NOT DRINK."
- Design of the stormwater storage component is flexible as long as the water quality volume and an appropriate distribution system can be accommodated.
- Enclosed tanks should have a hatch or manhole opening for maintenance access. Above-ground tanks should be sited in a stable area (ideally in a cool, shaded location to avoid algal growth) and may require seismic stabilization if greater than 5000 gallons.
- Any pumps and treatment components should be accessible for maintenance.

A pretreatment component is necessary to remove trash and sediment prior to storage to avoid clogging the distribution pump and to reduce maintenance. Pretreatment components may be:

- first flush diverter
- in-line filter
- upstream BMP

GREEN ROOF

A green roof is a vegetated systems covering a building's roof that detains and filters incident rainfall. Stormwater is captured in the soil media and storage layers of the system, reducing peak storm flows and promoting evapotranspiration. A primary water quality benefit of green roofs is that they avoid the common pollutants associated with conventional roof runoff, instead releasing only rainwater that has been further filtered. Green roofs can be designed with minimal thickness to allow retrofit installation on existing buildings or with a mix of shrubs, trees, pathways, and benches to be a valuable amenity for building tenants and the public.

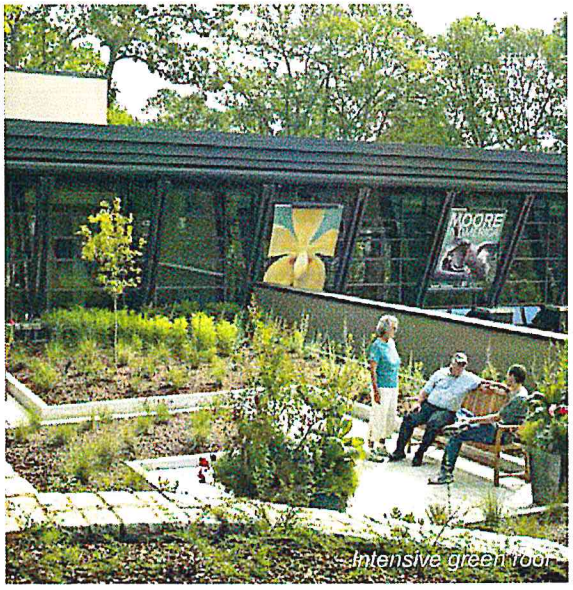


Green roofs are unique stormwater features which also provide a variety of diverse benefits to building systems as well as inhabitants and users.

Application Examples



Extensive green roof



Intensive green roof

Benefits

- Reduces the peak discharge rate by slowing down roof runoff
- Enhances site aesthetics and can provide a useable amenity or public space
- Creates habitat and increases vegetation, even in densely developed areas
- Can extend the life of the roof, compared to a conventional roof
- Reduces heat island effect and improves air quality
- Provides insulation, which reduces building energy use

Potential Constraints

- Not ideal for steep roofs (>20 degrees)
- Only manages rooftop runoff
- Greater roof weight may increase dead and live loads and increase structural support requirements
- Existing buildings may not be able to support increased load
- Will likely require irrigation during establishment (typically first 2 years) and dry seasons
- Requires increased maintenance compared to a conventional roof
- Higher cost than other BMPs

Siting Applications

- Commercial, industrial, and large residential buildings
- Urban areas with limited space and/or minimal vegetation

Other Names: Vegetated Roof, Living Roof

Technical Information

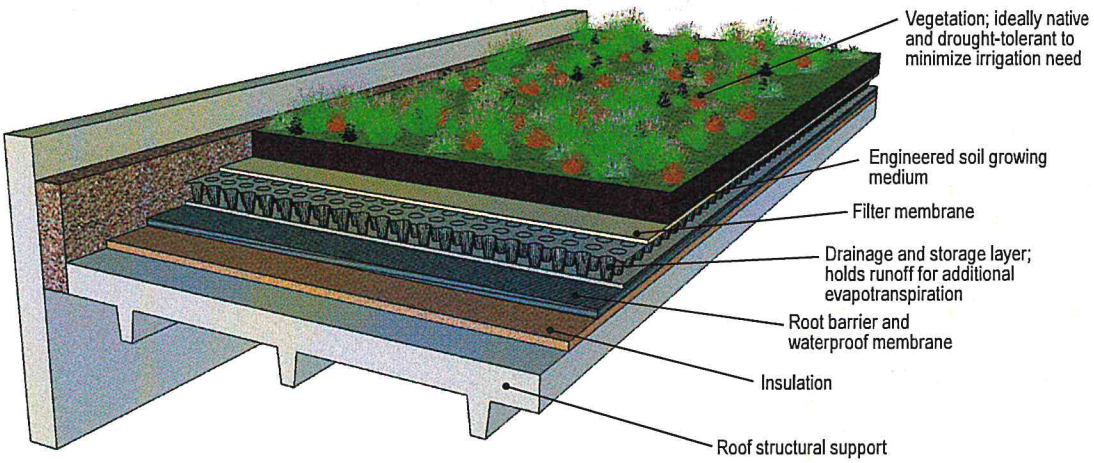


Figure: Green roof typical detail

Design & Sizing Criteria

- Green roofs are flow-based systems designed to treat the rainfall that falls directly onto the vegetated area.
- Runoff from rooftop areas that are not part of the vegetated system (such as spaces for mechanical or ventilation equipment) will likely need to be routed to treatment areas on the ground.
- Green roofs are generally classified as either extensive or intensive. Extensive green roofs generally have six inches or less of soil media, use smaller plants, are a lower maintenance option, and are typically not intended to be accessible. Intensive green roofs have greater than six inches of soil, larger plants, greater structural and maintenance requirements, and are often designed as rooftop gardens or park-like settings for use by people.
- They are most suitable for flat roofs or those with slopes less than 20 degrees. Extensive green roofs can be constructed on slopes up to 40 degrees with specialized designs.
- A new or retrofit building must be designed to support the weight of the green roof when all layers and vegetation are fully saturated. This wet weight can be up to 6 or 7 pounds per square foot per inch of soil depth.
- A waterproof membrane is needed to protect the roof structure and a root barrier can be installed to protect the membrane. Insulation, if included, can be installed either above or below the waterproof membrane.

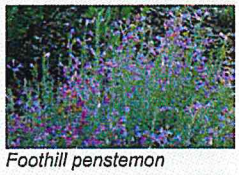
Plant Selection *(See Appendix A)*

Vegetated roofs should feature drought tolerant plants that are well adapted to the local climate. Vegetation that is fire resistant is important considering the setting. Low maintenance plants that will create a healthy and appealing aesthetic are ideal candidates for vegetated roofs. Long lived and perennial plants are favorable.


Coreopsis


Beard tongue


Lyme grass


Foothill penstemon

References

Master Plans

Nolte Associates, Inc. City of Riverbank Storm Drain System Master Plan. City of Riverbank, June 2008.

P&D Consultants. Bruinville Area Master Public Facilities Plan, Public Review Draft. City of Riverbank, September 2005

Standards and Specifications

Department of Public Works Stanislaus County: Standards & Specifications, 2007 Edition. Stanislaus County Public Works, 2007.

http://www.stancounty.com/publicworks/storm/pdf/improvement-standard-update.pdf

City of Riverbank Standard Specifications. City of Riverbank, 2007.

http://www.riverbank.org/Depts/PublicWorks/wastewater/WastewaterStandards.pdf

Mosquito Abatement

Local District

East Side Mosquito Abatement District

http://www.eastsidemosquito.com/

This district is a member of:

Mosquito & Vector Control Association of California (MVCAC)

www.mvcac.org/

American Mosquito Control Association (AMCA)

http://www.mosquito.org/

LID Design Guides and References

California Stormwater Quality Association Stormwater Best Management Practice Handbook: New Development and Redevelopment. California Stormwater Quality Association, January 2003.

C.3 Stormwater Technical Guidance, Version 3.1. San Mateo Countywide Water Pollution Prevention Program, August 2012.

City of Modesto Stormwater Management Program: 2011 Guidance Manual for Development Stormwater Quality Control Measures. Wastewater Division, City of Modesto, May 2011.

Low Impact Development Manual for Southern California: Technical Guidance and Site Planning Strategies. California State Water Resources Control Board and Low Impact Development Center, Inc., April 2010.

Start at the Source: Design Guidance Manual for Stormwater Quality Protection. Bay Area Stormwater Management Agencies Association (BASMAA), 1999.

Stormwater C.3 Guidebook: Stormwater Quality Requirements for Development Applications, 6th Edition. Contra Costa Clean Water Program, February 2012.

Stormwater Quality Design Manual for the Sacramento and South Placer Regions, First Edition. May 2007.

Storm Water Quality Handbooks: Project Planning and Design Guide. State of California Department of Transportation, July 2010.

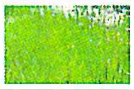
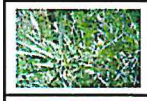
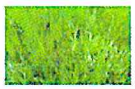
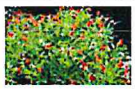
Technical Guidance Document for the Preparation of Conceptual/Preliminary and/or Project Water Quality Management Plans (WQMPs). Orange County Watersheds, May 2011.

Other Design References

A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. University of California Cooperative Extension California Department of Water Resources, August 2000.

Appendix A - Plant List

The species listed below are intended to serve as a general guide for identifying plants likely to be suitable for use in LID within Central California climate zones. This list has been compiled of largely California native species and augmented with California friendly species to promote species diversity while avoiding monoculture. The list has been organized to group species likely to be compatible with the hydrozones found in the LID solutions in this manual and includes information for determining estimated water budgets. A qualified professional in LID site design should be consulted before construction and implementation.

Photo	Common Name	Latin Name	Form	Light Level	Irrigation Need	Height/ Spread
Suitable for long periods of inundation or permanent shallow water						
	Beaked Spikerush	*Eleocharis rostellata*	Grass	Sunny	High	3'-4' / 3'-4'
	Cardinal Flower	*Lobelia cardinalis*	Perennial	Sunny	Medium	1'-6' / 1'-3'
	Common Spikerush	*Eleocharis palustris*	Grass	Sunny	High	6"-18" / 6"-18"
	Gooding's Willow	*Salix gooddingii*	Tree	Sunny	High	10'-40'
	Long Leaf Rush	*Juncus macrophylla*	Grass	Sunny	High	2'-3' / 2'-3'
	Narrowleaf Willow	*Salix exigua*	Tree	Sunny	High	8'-16' / 8'-16'
	Needle Spikerush	*Eleocharis acicularis*	Grass	Sunny	High	6 "/ 6"
	Pacific Reed Grass	*Calamagrostis nutkaensis*	Grass	Sunny	Low	2' / 2'-3'
	Scarlet Monkey Flower	*Mimulus cardinalis*	Perennial	Sunny	Medium	3' / 2'
	Silvery Sedge	*Carex canescens*	Grass	Sunny	High	1'-2' / 1'-2'
	Soft Rush	*Juncus effuses*	Grass	Sunny	Medium	2'-3' / 2'-3'

Notes: Certain plants which prefer very wet environments will generally be suitable for use in locations which experience only short periods of inundation. Of the plants listed above, this would include Cardinal Flower, Pacific Reed Grass, and Scarlet Monkey Flower.

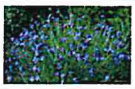
Photo	Common Name	Latin Name	Form	Light Level	Irrigation Need	Height/ Spread
Suitable for short periods of inundation (24-48 hours)						
	Blue eyed grass	*Sisyrichium bellum*	Grass	Sunny	Very Low	6"-18"
	Blue Oat Grass	*Helicotrichon sempervirens*	Grass	Sunny	Medium	24"-30" / 24"-30"
	California rose	*Rosa californica*	Shrub	Sunny	Low	3'-5' / 8'-10'
	California wax myrtle	*Myrica californica*	Shrub	Sunny	Low	15'-20' / 15'-20'
	Common Rush	*Juncus patens*	Grass	Sunny	Medium	18"-24" / 18"-24"
	Cottonwood	*Populus fremontii*	Tree	Sunny	Medium	40'-60' / 25'
	Deer grass	*Muhlenbergia rigens*	Grass	Sunny	Low	2'-3' / 2'-3'
	Desert Baccharis	*Baccharis sergiloides*	Shrub	Sunny	Low	4'-6' / 4'-6'
	Desert willow	*Chilopsis linearis*	Tree / shrub	Sunny	Very Low	15'-20' / 15'-20'
	Fourwing saltbush	*Atriplex canescens*	Shrub	Sunny	Very Low	4'-5'
	Narrow leaf milkweed	*Asclepias fascicularis*	Shrub/ gound-cover	Sunny	Low	2'-3' / 3'-4'
	San Diego sedge	*Carex spissa*	Grass	Sunny	Medium	3'-5' / 4'-5'
	Sweet bay	*Laurus nobilis*	Tree / shrub	Sunny/ Partial Shade	Low	15'-20' / 15'-20'
	Western meadow sedge	*Carex praegracilis*	Grass	Sunny	Medium	12"-15"
	Western sycamore	*Platanus racemosa*	Tree	Sunny	Medium	40'-80' / 30'-50'

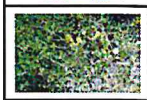
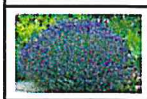
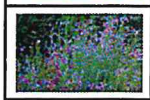
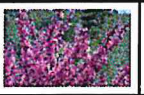
Photo	Common Name	Latin Name	Form	Light Level	Irrigation Need	Height/ Spread
Prefer upland / suitable for slope stability						
	Beard tongue	*Penstemon spectabilis*	Shrub / perennial	Sunny	Low	3'-5'
	Blue grama	*Bouteloua gracilis*	Grass	Sunny	Low	15"-24" / 12"
	Broom Baccharis	*Baccharis sarothroides*	Shrub	Sunny	Low	8'-10' / 8'-10'
	Bush anemone	*Carpenteria californica*	Shrub	Partial Shade	Low	6' / 6'
	Bush monkey flower	*Mimulus aurantiacus*	Shrub	Sunny	Low	2'-3' / 2'-3'
	California encelia	*Encelia californica*	Shrub	Sunny	Very Low	3'-5' / 3'-5'
	California Meadow Sedge	*Carex Pansa*	Grass	Sunny	Medium	12" / 18"
	California sagebrush	*Artemisia californica*	Shrub	Sunny	Low	3'-5' / 5'-7'
	Canyon live oak	*Quercus chrysolepis*	Tree	Sunny/ Partial Shade	Low	60' / 40'
	Chaparral honeysuckle	*Lonicera subspicata*	Shrub / vine	Partial Shade	Medium	3'-4' / 8'-10'
	Chuparosa	*Justicia californica*	Shrub	Sunny	Low	4'-6' / 6'-8'
	Coast live oak	*Quercus agrifolia*	Tree	Sunny	Very Low	30'-60' / 40'-70'
	Common buckwheat	*Eriogonum fasciculatum*	Shrub	Sunny	Low	2'-3' / 2'-3'
	Coreopsis	*Coreopsis grandiflora*	Shrub / perennial	Sunny	Low	1'-2' / 2'-3 '
	Coreopsis - large	*Coreopsis gigantea*	Shrub / perennial	Sunny	Low	3'-5' / 3'-4'
	Desert mallow	*Sphaeralcea ambigua*	Shrub	Sunny	Low	2'-3' / 2'-3'
	English lavender	*Lavandula angustifolia*	Shrub	Sunny	Low	2'-3' / 2'-3'
	Ericameria	*Ericameria laricifolia*	Shrub	Sunny	Low	2'-4' / 2'-4'

Photo	Common Name	Latin Name	Form	Light Level	Irrigation Need	Height/ Spread
	Foothill needle grass	*Nassella lepida*	Grass	Sunny	Low	1'-2' / 1'-2'
	Foothill penstemon	*Penstemon heterophyllus*	Shrub / perennial	Sunny	Low	1'-2'/ spreading
	Grape soda lupine	*Lupinus excubitus*	Shrub	Sunny	Very Low	3' / 4'
	Honey mesquite	*Prosopis glandulosa*	Tree	Sunny	Low	25'-30' / 25'-30'
	Hummingbird trumpet	*Epilobium canum*	Shrub	Sunny/ Partial Shade	Low	varies
	Lyme grass	*Leymus arenarius*	Grass	Sunny	Very low	4'-5' / clumping
	Nodding needle grass	*Nassella cernua*	Grass	Sunny	Low	3' / 3'
	Parry's penstemon	*Penstemon palmeri*	Shrub / perennial	Sunny	Low	4'-6'
	Pink muhly grass	*Muhlenbergia capillaris*	Grass	Sunny	Low	2' / 2'-3'
	Purple needle grass	*Nassella pulchra*	Grass	Sunny	Low	18"-24" / 18"-24"
	Rosemary	*Rosmarinus officinalis*	Shrub	Sunny	Low	4'-6' / 6'-10'
	Saffron buckwheat	*Eriogonum crocatum*	Shrub	Sunny	Low	1'-2' / 2'-3'
	Scarlet bugler	*Penstemon centranthifolius*	Shrub / perennial	Sunny	Low	2'-3' / 2'-3'
	Sulfur buckwheat	*Eriogonum unbellatum*	Shrub / ground-cover	Sunny	Low	6"-18" / 1'-3'
	Western redbud	*Cercis occidentalis*	Tree	Sunny/ Partial Shade	Very Low	15'-20' / 15'-20'
	Western serviceberry	*Amelanchier alnifolia*	Shrub / Tree	Sunny/ Partial Shade	Low	3'-15' / 6'
	Wild rye	*Leymus condensatus*	Grass	Sunny	Very Low	2'-3' / 2'-3'
	Yarrow	*Achillea millefolium*	Ground-cover	Sunny	Low	18"-30" / clumping

Appendix B - BMP Pollutant Removal Efficiency

Different pollutants tend to be present in runoff depending on the land use. The table below provides general guidance as to which pollutants may be expected in higher concentrations, as well as the typical ability for different BMPs to remove the pollutants.

		Target Pollutant				
		Sediment	Nutrients	Metals	Bacteria	Oil & Grease
Land Use	Agriculture	×	×		×	
	Commercial	×		×		×
	Residential	×				
	Industrial	×		×		×
	Parks	×				
	Vacant/Barren Areas	×	×			
	Roads & Parking Lots	×		×		×

		Pollutant Removal Efficiency				
		Sediment	Nutrients	Metals	Bacteria	Oil & Grease
Best Management Practice	Underground Infiltration[1]	o	●	●	●	●
	Bioretention Area[2]	●	o	o	●	●
	Vegetated Swale	o	○	o	○	o
	Filter Strip	●	○	●	○	o
	Vegetated Basin	o	○	o	o	o
	Constructed Wetland	●	o	●	●	●
	Permeable Pavement [1]	●	●	o	o	o
	Rainwater Harvesting [3]	●	●	●	●	●
	Green Roof [4]	●	●	●	●	●

Key to Symbols: ● High o Medium ○ Low

1 If underground infiltration and permeable pavement are unable to drain by infiltration, removal efficiency for all constituents is low.

2 Assumes that bioretention area is drained by underdrains. If able to discharge via infiltration, efficiency will be increased.

3 Rainwater harvesting effectively removes all pollutants from runoff since the water quality volume is never released downstream.

4 Green roofs receive runoff which has not yet encountered pollutants, and eliminate the addition of pollutants typically found on roofs.

Appendix C - Planning Area Maps

Additional maps, showing the entire Riverbank Planning Area, are included for reference on the following pages.

- Opportunity Sites Map
- Soils Map
- Depth to Hardpan Layer Map

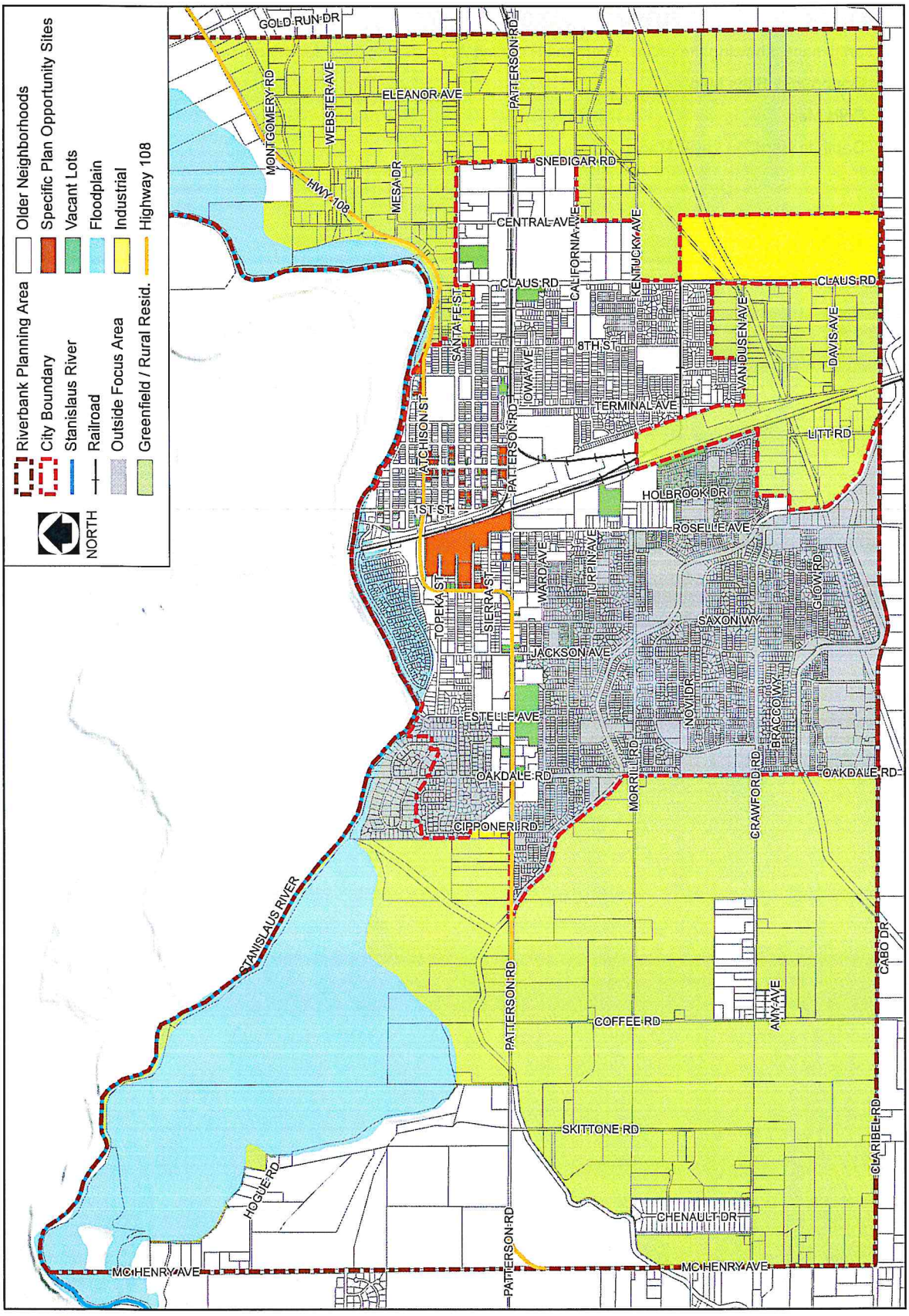


Figure C1: Opportunity Sites Map (Source: General Plan)

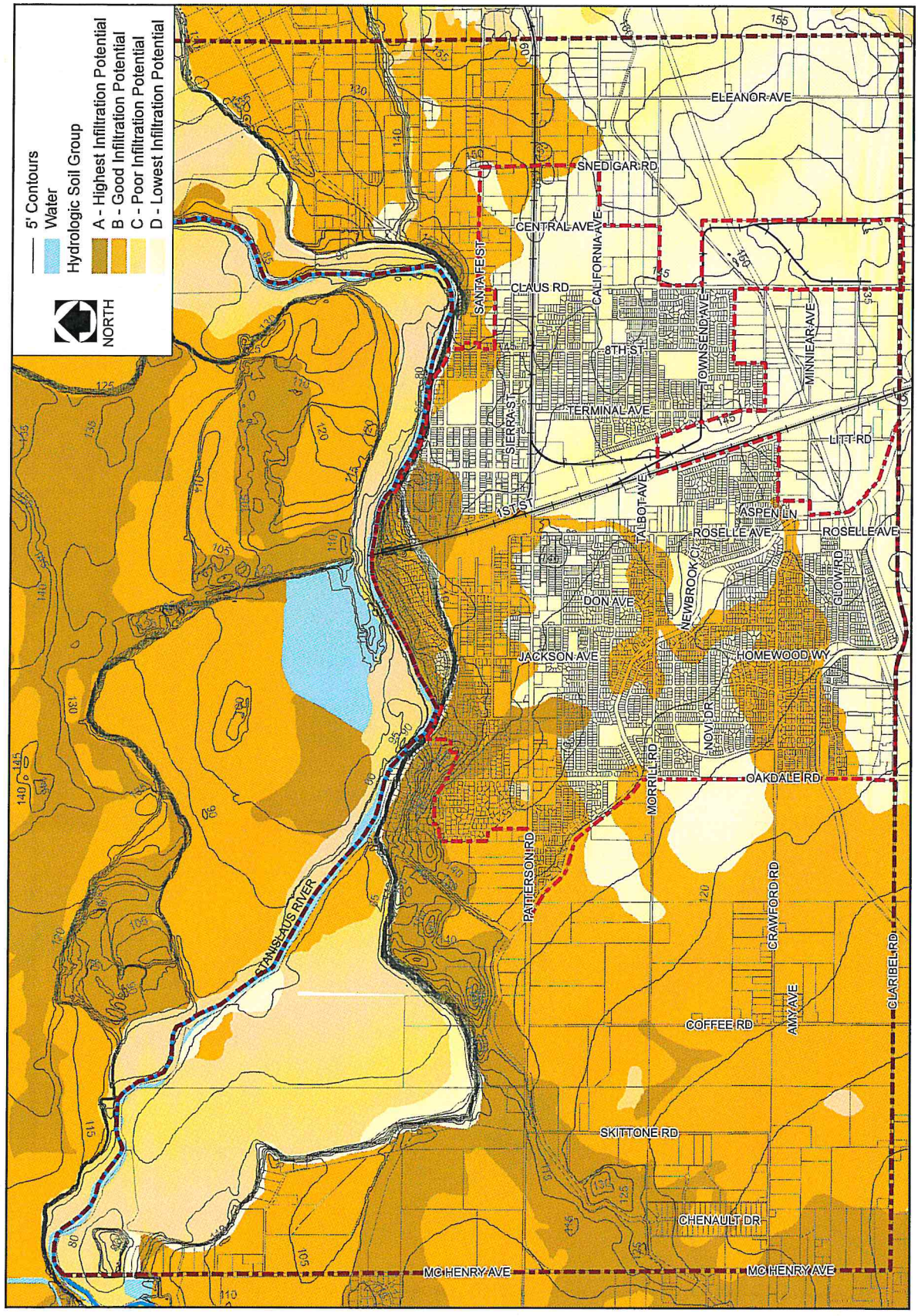


Figure C2: Soils Map (Source: NRCS 2011)

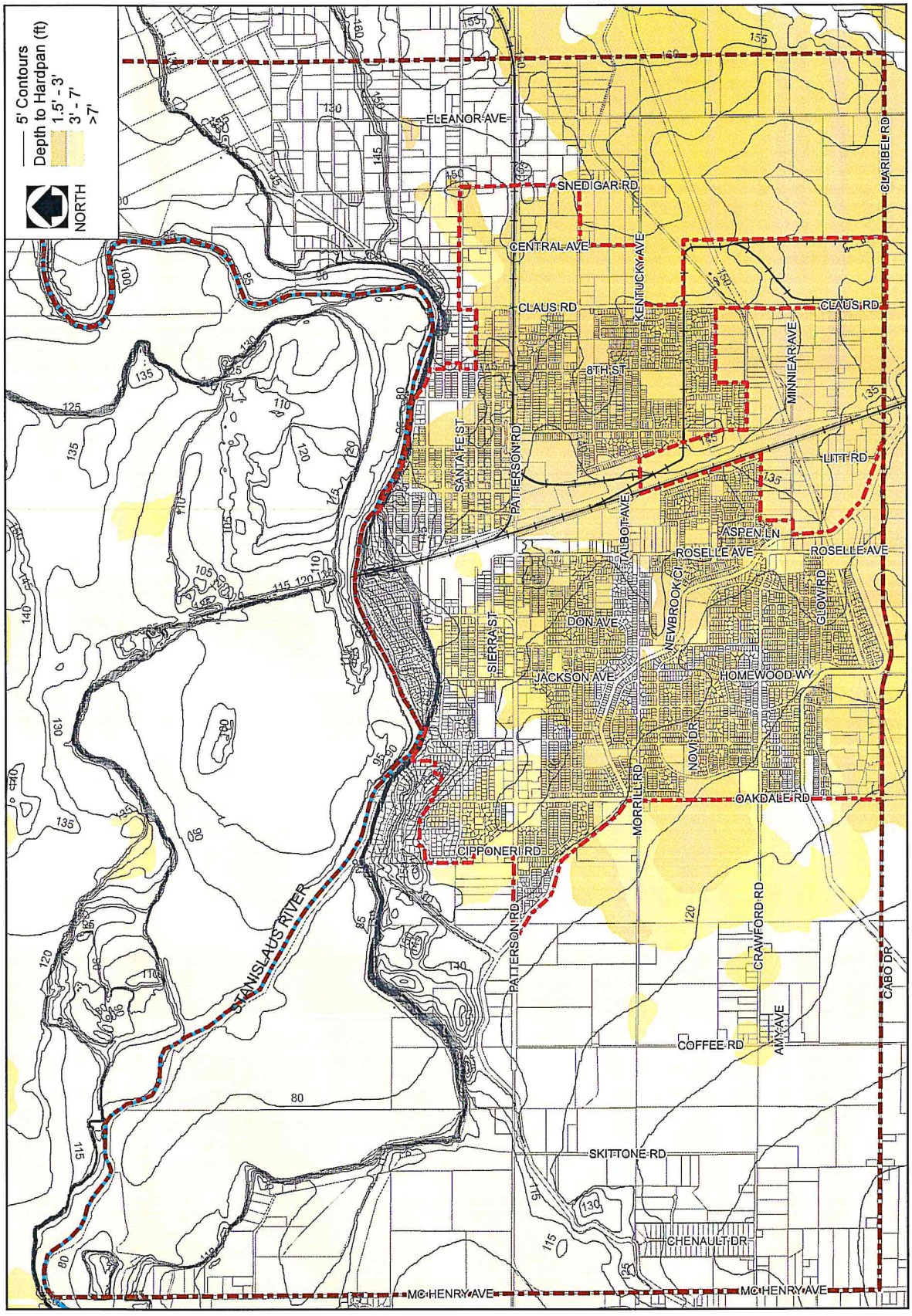
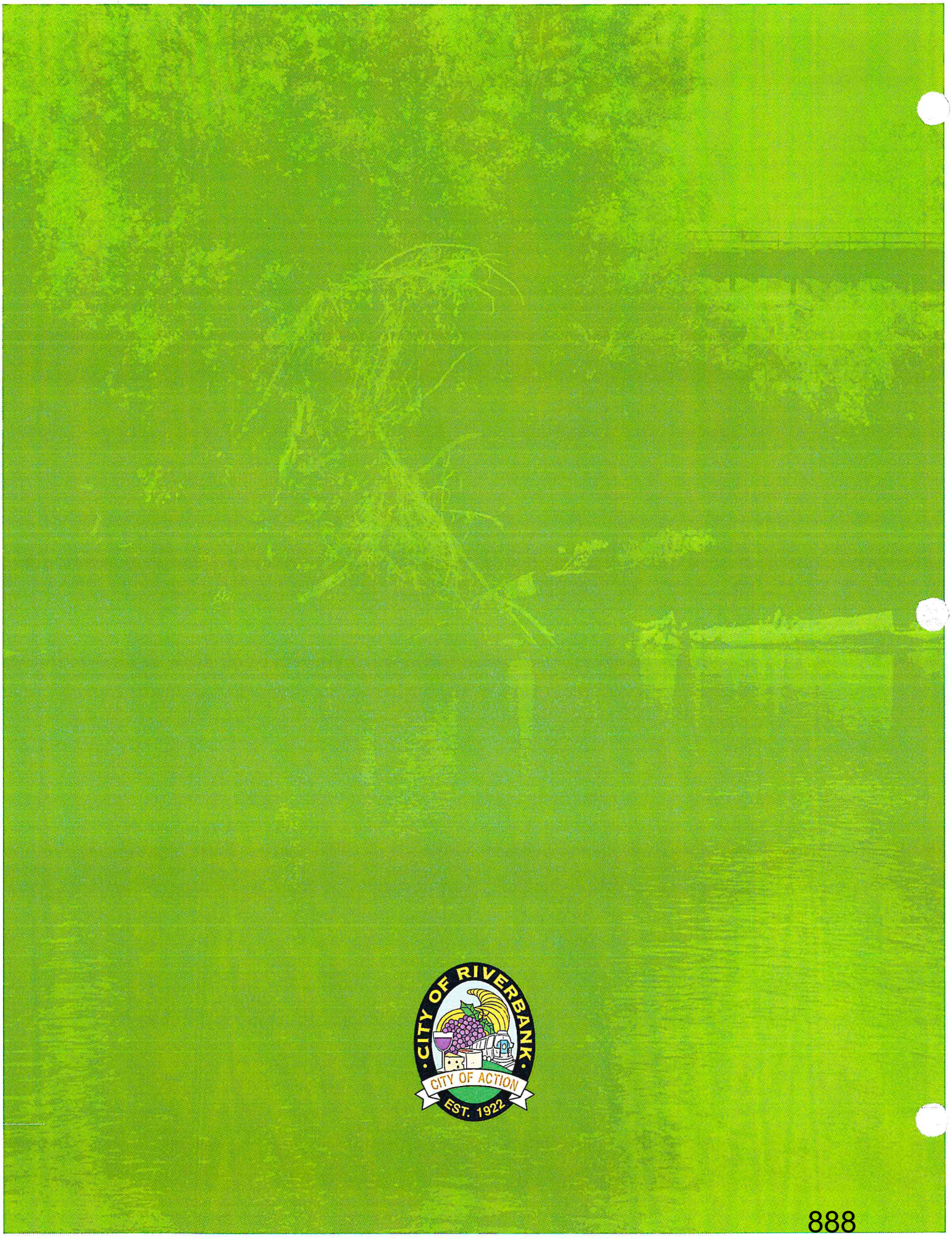


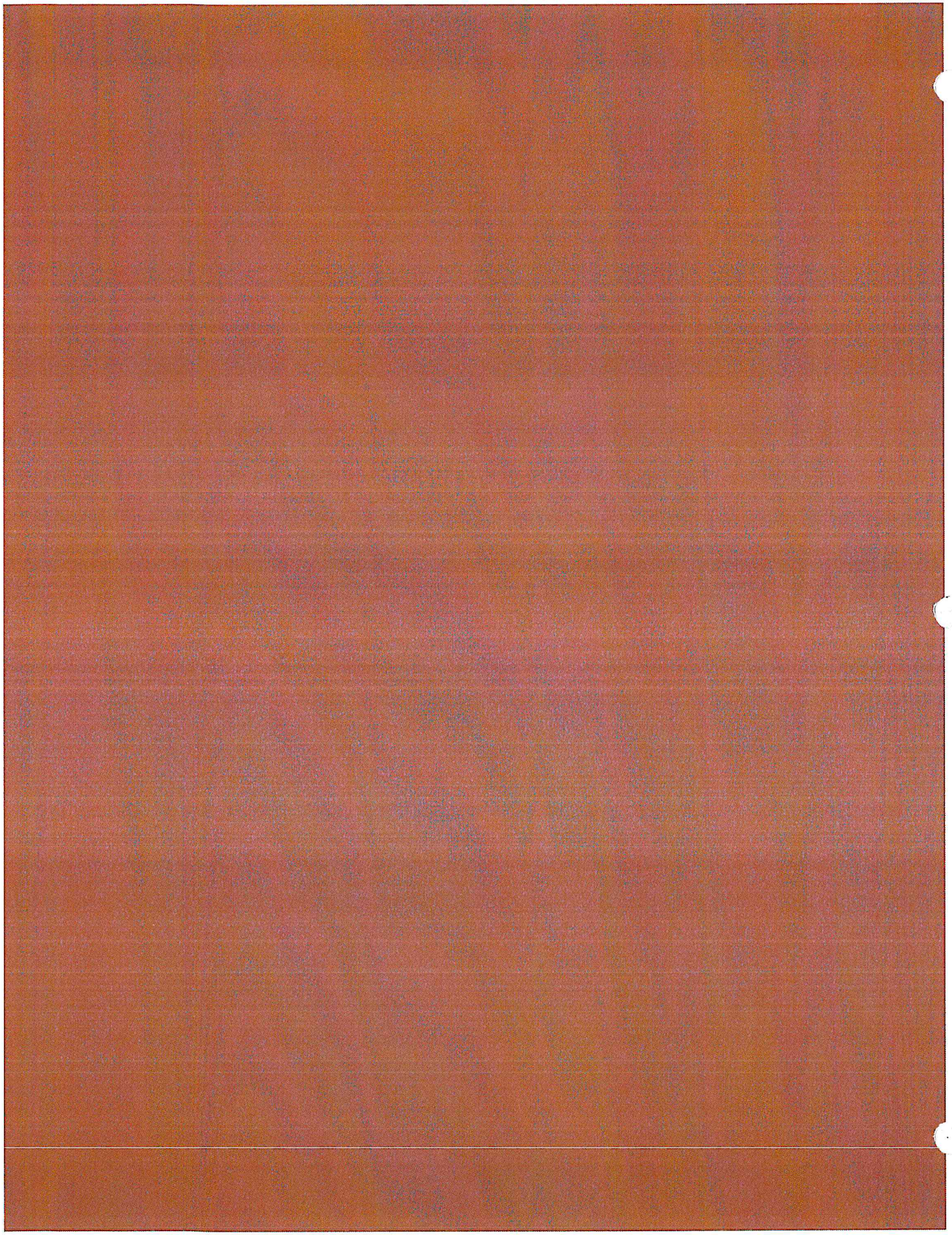
Figure C3: Depth to Hardpan Layer Map (Source: NRCS 2011)


CITY OF RIVERBANK
CITY OF ACTION
EST. 1922

APPENDIX D:

STORMWATER MANAGEMENT

LID Stormwater Management for the Riverbank Army Ammunition Plant



LID STORMWATER MANAGEMENT FOR THE RIVERBANK ARMY AMMUNITION PLANT

FOR THE RIVERBANK LOCAL REDEVELOPMENT AUTHORITY

DESIGN, COMMUNITY & ENVIRONMENT

1625 SHATTUCK AVENUE, SUITE 300
BERKELEY, CALIFORNIA 94709
TEL: 510 848 3815
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AUGUST 2010

LID STORMWATER MANAGEMENT

The Riverbank Local Redevelopment Authority (LRA) is pursuing redevelopment of the Riverbank Army Ammunitions Plant (RAAP) to attract employers and employees to Riverbank, see Figures 1 and 2. RAAP is a 173-acre site that was originally constructed during World War II as an aluminum smelting plant. It was subsequently converted for manufacturing mortar shells and other armaments.

As part of this effort, the LRA is seeking development of a "green" corporate park that incorporates as many sustainable practices as are feasible to retain current tenants and attract new development on the property.

New development at RAAP will further the City's sustainability goals by incorporating sustainable design principles that minimize energy consumption, conserve water, and use recycled or sustainable building materials. In addition, landscape and streetscape design will incorporate sustainability principles.

This document focuses on potential low impact development (LID) strategies to address stormwater management for the site. It provides approaches to minimizing impacts to the existing infrastructure while looking at other methods for distribution, collection, and potential reuse of stormwater in consideration of the site's opportunities and constraints. In addition, this document identifies which strategies are appropriate for portions of the site that have already been developed, as well as undeveloped parts of the site. An end goal of these sustainable design approaches is to draw "green" employers to the area.

A. LID Components

The LRA is particularly interested in incorporating LID practices to address stormwater management on-site. LID addresses stormwater management by reintroducing systems that are modeled on natural processes. These systems include infiltration, filtering, storing, evaporation, bioretention, and deten-

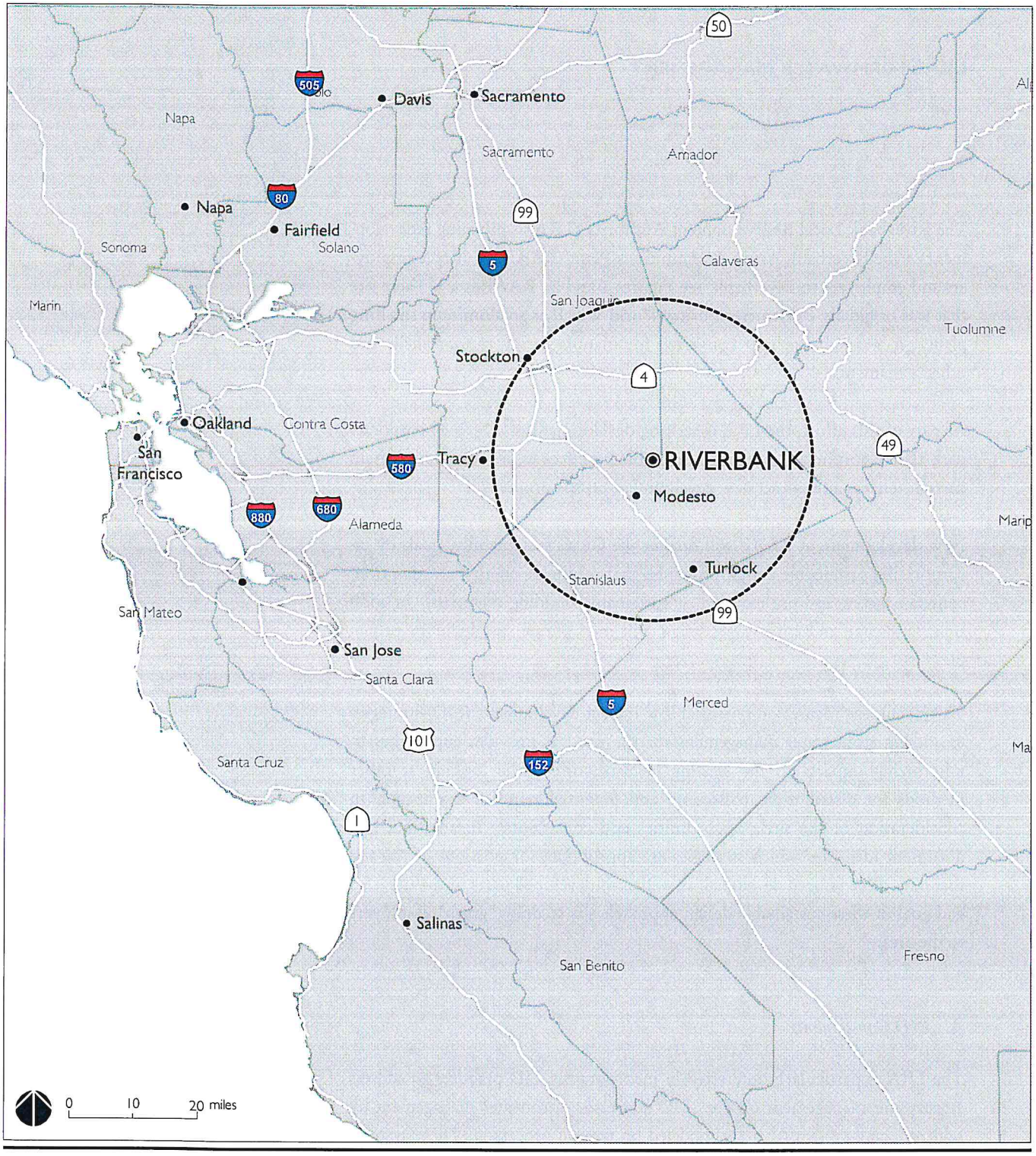


FIGURE 1

REGIONAL LOCATION

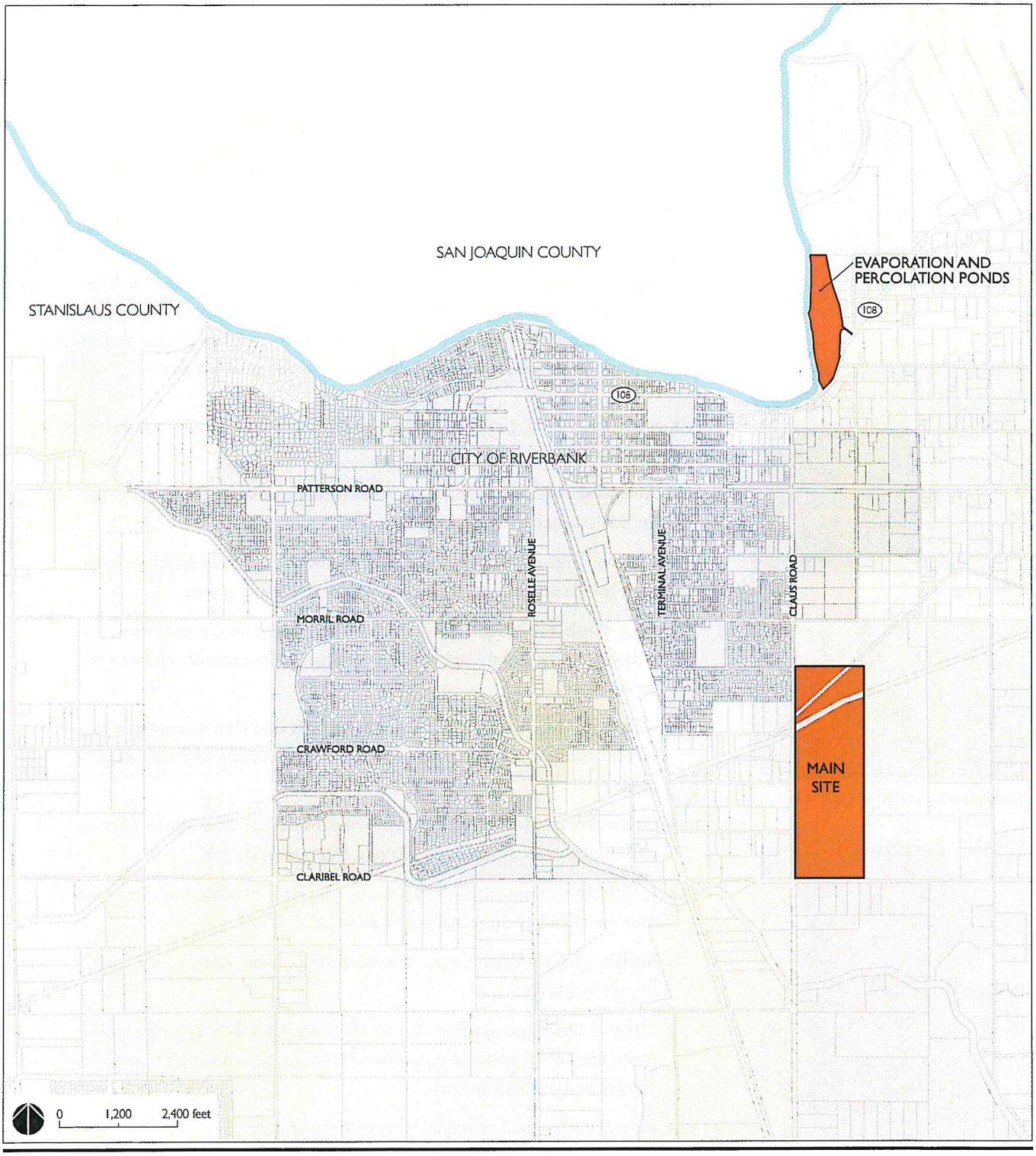
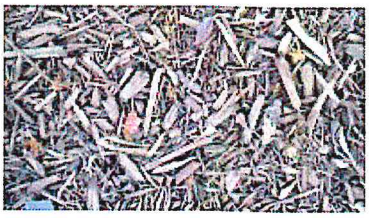


FIGURE 2

PROJECT SITE

tion of runoff in a decentralized fashion. LID minimizes or eliminates the need for a more traditional system based on capturing and conveying/disposing stormwater into a centralized facility. A LID approach encourages conservation measures to slow the flow and reduce the amount of stormwater runoff; minimizes development impacts; and uses a variety of integrated best management practices (BMPs) to reduce and clean runoff.


Vegetated swale


Mulch from recycled wood waste


Rain Barrel

There are many strategies that can be used to incorporate LID into stormwater management, including:

- **Amended Soil**: soil enriched with sand and organic materials to increase the soil's capacity to infiltrate water.
- **Cistern**: large containers that collect rainwater, typically from rooftops. Rain barrels are similar but store a smaller amount of water.
- **First Flush Filtering**: filtering process that removes contaminants, waterborne heavy metals and chemical residues before runoff reaches a water storage system.
- **Grassy or Vegetated Swale**: planted channels that slow stormwater runoff and encourage infiltration, entrapment of sediment, and treatment of pollutants.
- **Green Roofs**: planted roofs that provide insulation, slow stormwater runoff, improve air quality, and increase evapotranspiration.
- **Infiltration Basins**: shallow depressions designed to infiltrate stormwater into the soil and help recharge groundwater.
- **Mulch**: Organic matter used as a weed suppressant and to retain water for use by plants.
- **Natural Drainage**: grading that works with natural topography and/or preserves natural patterns of stormwater drainage, reducing the need for constructed drainage systems.
- **Rain Barrels**: small containers that collect rainwater, typically from rooftops.

- **Rain Garden:** depressions or low areas designed with soil amendments to promote infiltration of stormwater.
- **Planting:** organic material that, by increasing the size of planting areas and designing to accommodate seasonal inundation, can provide additional absorption of water.
- **Porous Pavement:** pavement systems that allow stormwater to infiltrate the ground.
- **Preserved Native Vegetation:** naturally occurring vegetation on-site that is protected and/or enhanced, providing connection to the existing natural plant community, as well as improved evaporation-transpiration.
- **Redirection of Rooftop Runoff:** disconnecting downspouts and directing rooftop runoff into storage or vegetated swales, planters, or other landscape areas that encourage infiltration.
- **Reduced Hardscape:** reduction of impervious surfaces, including street narrowing, to increase pervious surfaces and open areas.


Porous pavement


Redirection of Rooftop Runoff

B. Goals

The LRA has established three key sustainability principles as guides for development on site:

- New development should minimize energy consumption, conserve water use, and use recycled or sustainable building materials.
- Landscaping should be appropriate to the local climate and provide stormwater collection and retention.
- Existing buildings should be retrofitted to allow rainwater capture and reuse on-site including for irrigation and detention/retention.

For RAAP's stormwater infrastructure, these principles can be implemented through a combination of incorporating LID components into existing and

future development and directing the remaining stormwater runoff into stormwater reservoirs.

C. *Stormwater Regulations*

Development at RAAP will need to comply with national, State, and local stormwater regulations.

All construction activities that disturb more than one acre or are part of a larger development disturbing more than one acre may be subject to the National Pollutant Discharge Elimination System (NPDES) Construction Activities Storm Water General Permit. These activities must submit a Storm Water Pollution Prevention Plan (SWPPP) as outlined in the Stanislaus County Storm Water Management and Discharge Control Ordinance.[1]

To regulate post-construction stormwater discharge, Stanislaus County is currently developing a Manual of Storm Water Quality Control Standards to comply with the national requirements of Attachment 4 of the NPDES General Permit. This manual will be available in September 2010. The NPDES General Permit was put in place by an amendment to the Clean Water Act to reduce the amount of point source pollutants. While the County is still developing its guidelines, post-construction stormwater management in new development or redevelopment must, at a minimum, comply with the State NPDES requirements.[2] A few of these general requirements are outlined below:

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[1] Specific requirements of a SWPPP are not discussed in this document. More information can be found in the Stanislaus County Storm Water Management and Discharge Control Ordinance. http://www.stancounty.com/publicworks/storm/pdf/storm-water-mgmt-discharge-control-ordinance.pdf.

[2] The State Water Resources Control Board Fact sheet for the NPDES General Permit is available at http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/final_ms4_permit.pdf.

- Stormwater runoff may not exceed predevelopment rates.
- Conserve natural areas when possible, cluster development, limit grading, protect wetlands, and maximize vegetation.
- Capture pollutants of concern such as gasoline, pesticide, and pathogens in BMPs on site.
- Protect slopes from runoff using appropriate native vegetation and energy dissipaters.
- Incorporate volumetric or flow based treatment BMPs to mitigate stormwater runoff based on the design storm event for the site.
- Reduce parking lot areas and capture stormwater runoff in landscape BMPs.

Until Stanislaus County completes its manual, it is recommended that site development at RAAP comply with section C.3 of the NPDES Permit developed for the San Francisco Bay Region for new and redevelopment projects.[3] These regulations require that projects that create or replace 10,000 square feet or more of impervious surface must treat 100 percent of the amount of runoff with LID treatment measures on-site or at joint treatment facilities. If a project replaces more than 50 percent of the impervious surface, all the stormwater runoff from the site, for the design storm event, must be treated. If a project replaces less than 50 percent of impervious surface, only the new surface must be treated. Preferred LID measures are discussed in Section E of this document and include rainwater harvesting and reuse, rainwater infiltration into on-site soil, and reducing impervious areas.4

[3] The October 14, 2009 San Francisco Bay Region NPDES Permit is available at www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/mrp.shtml.

[4] Another good resource is Contra Costa Clean Water Program Stormwater C.3 Guidebook September 10, 2008 which is a standard urban stormwater management plan with stormwater management techniques, combining traditional and LID approaches, http://www.ccclean water.org/Publications/Guidebook/Stormwater_C3_Guidebook_4th_Edition_9-10-08.pdf.

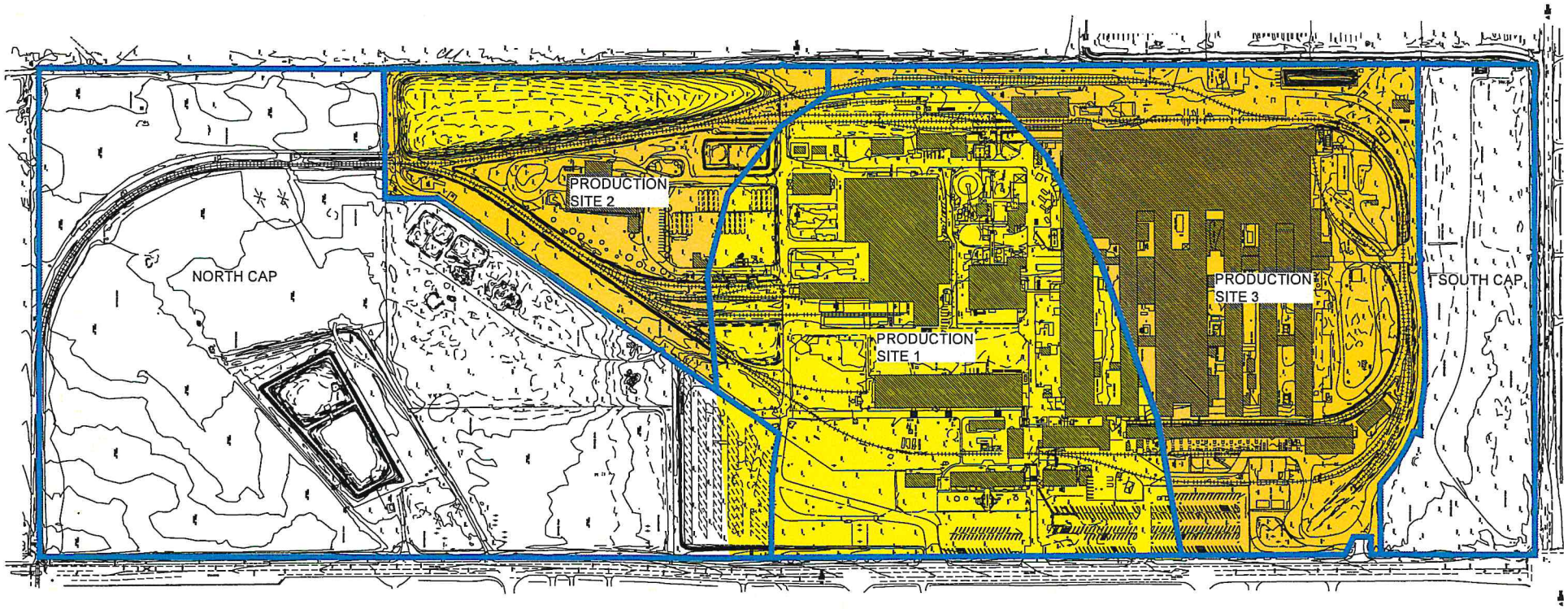
D. Existing Conditions

The RAAP site can be divided into five different areas, each with separate requirements and opportunities for inclusion of LID approaches to storm-water management. The five areas are shown in Figure 3 and include Production Sites 1 through 3, the North End Cap, and the South End Cap. The three Production Sites include the areas around buildings formerly associated with the production of ammunitions; they are differentiated based on geography and the presence of groundwater contamination. The North End Cap is the land north of the Production Sites and is transected by the Hetch Hetchy Aquaduct and Oakdale Irrigation Canal. The North End Cap is undeveloped with the exception of the northwest stormwater reservoir and stormwater lift station. The South End Cap is the undeveloped portion of the site located south of the Production Sites.[5]

Figure 4 shows a diagram of the storm sewer collection system. Addition information on the existing storm drain network for each area is provided in Section E of this document.

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[5] The existing topography on-site slopes gently towards the south. Stormwater runoff, in general, is collected in numerous inlets located around the RAAP site that connect to a main storm drain line. The main storm drain line carries flows towards the north, which is opposite the surface grades, to a lift station located near Gate 10. The lift station pumps flows into a gravity line where it flows towards the north to another lift station located adjacent to the northwest stormwater reservoir which conveys flow into the northwest stormwater reservoir. The northwest reservoir provides temporary storage of the stormwater runoff prior to being infiltrated into the underlying soil strata or evaporating into the atmosphere. During periods of excessive rain, any overflow from the northwest stormwater reservoir and lift station is conveyed to the Oakdale Irrigation District's 30-inch diameter line, which runs parallel to the north side of the northwest stormwater reservoir. A small portion of the RAAP site drains to the southeast stormwater reservoir, located near the southeast corner of the RAAP site. A lift station adjacent to the southeast stormwater reservoir pumps runoff into the gravity main storm drain line that carries flows towards the north as discussed above.



NORTH
1"=280'

LEGEND

*CATEGORY 5 GW CONTAMINATION

PRODUCTION AREA (IN GENERAL, EXISTING STRUCTURES TO REMAIN)

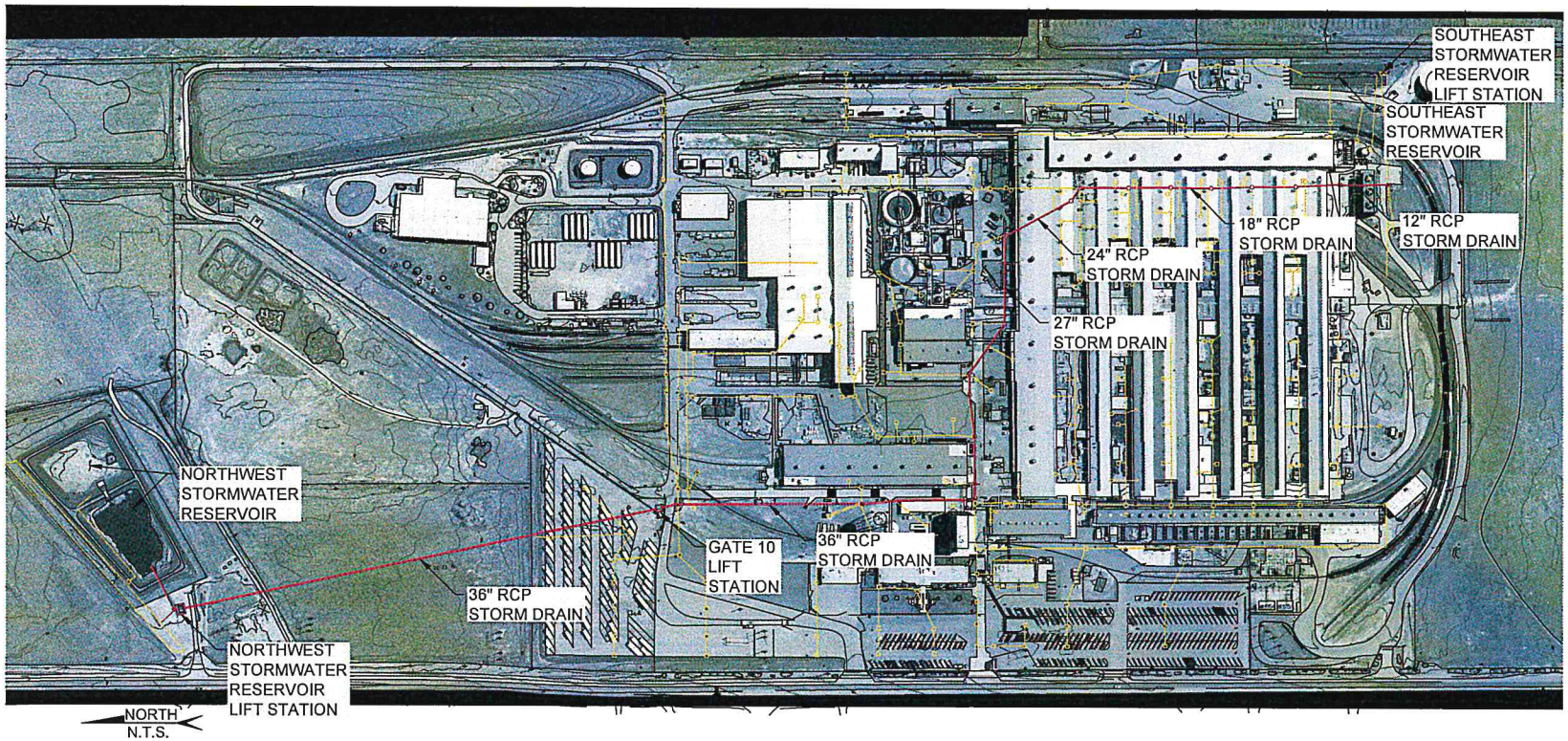
DESIGNATION AREA BOUNDARY

*APPROXIMATE LOCATION AS SHOWN ON FIGURE ES-1, PROPERTY CATEGORIZATION MAP BY CH2MHILL

Source: Weston Solutions

FIGURE 3

LID APPROACH BY AREA



Source: Weston Solutions

FIGURE 4
STORM SEWER COLLECTION SYSTEM

E. LID Approaches by Area

LID approaches for each area at the RAAP site are outlined below.

1. Production Site 1

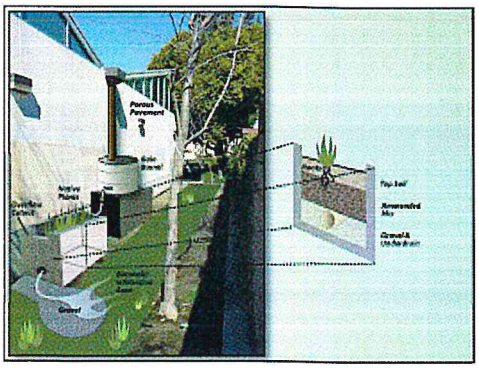
Production Site 1, as shown in Figure 5, comprises an elongated section in the middle of the overall site that coincides with groundwater contamination. The area is generally bounded by the railroad tracks to the east, the site boundary to west, Building 74 to the north, and Building Group 1 to the south. The total area of Production Site 1 is approximately 34 acres. Approximately 95 percent or more of this area is covered by impervious surfaces. Buildings occupy roughly 6.8 acres, or 20 percent, of the surface area. In a separate report, CH2M Hill identified Production Site 1 as an "area in which release, disposal, or migration of hazardous substances has occurred, and removal or other remedial actions are under way, but all required actions have not yet been taken."[6] Groundwater contamination is shown in Figure 6; the groundwater contamination includes both chromium and cyanide above the Maximum Contamination Level (MCLs).

Stormwater runoff is collected by numerous inlet structures, which connect to the main storm drain line. The main storm drain enters Production Site 1 as a 24-inch corrugated metal pipe (CMP) under the east side of Building 7. The pipe increases in size to 27 inches and proceeds west along Building 7. West of Building 9 the main storm drain line turns north, increases in size to 36 inches, and proceeds to a 600 gallons per minute (gpm) lift station located near Gate 10. Prior to reaching the 600 gpm pump station, the main line is joined by numerous laterals of varying size that collect stormwater runoff from inlets around the site. The lift station discharges to a 36-inch pipeline and continues north to the location of the northwest stormwater reservoir, where an additional storm drain lift station conveys the runoff into the northwest stormwater reservoir for storage and subsequent infiltration and evaporation.

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[6] CH2M Hill, 2006, *Environmental Condition of Property Phase 1 Report, Riverbank Army Ammunition Plant*, Figure ES-1: Property Categorization Map.

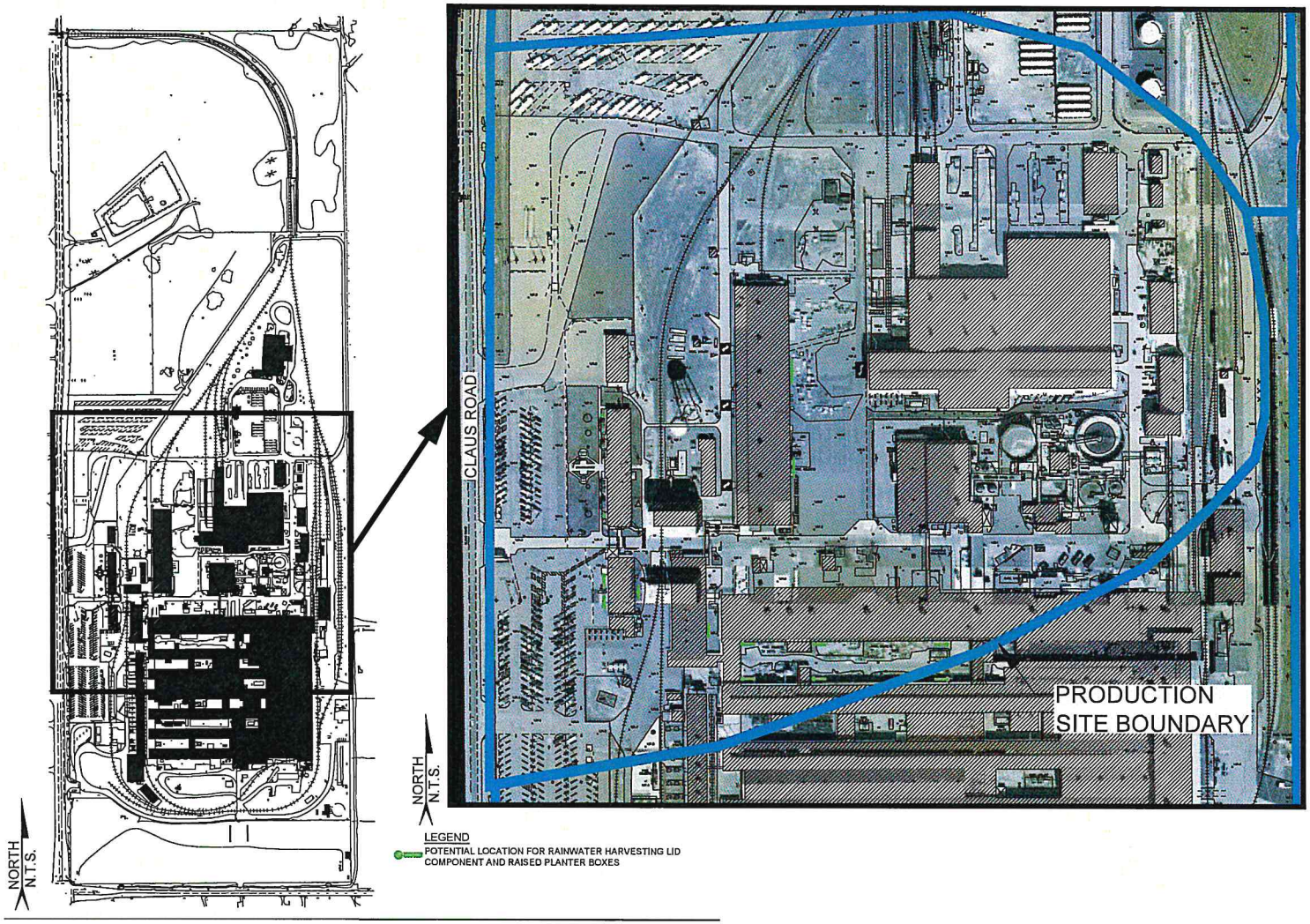
In Production Site 1, groundwater contamination issues limit the ability to increase permeability in this area to allow stormwater infiltration. Therefore, existing impervious surfaces should remain in place. In the future, if it is determined that remediation efforts are successful and the infiltration of surface runoff is deemed acceptable, LID components such as permeable hard surfaces, bioretention/infiltration basins, dry wells, and landscaped beds should be utilized in the area.



Rain catchment

A variety of rain catchment methods can be used in Production Site 1 to store stormwater runoff for irrigation and/or infiltration in other areas of the RAAP site. Redirection of rooftop runoff, including providing gutters to channel stormwater into cisterns and/or rain barrels, can be used successfully in this area with minimal cost. Based on the amount of roof area, harvesting water would moderately reduce the amount of runoff generated by this area. The harvested water would need to be utilized on-site shortly after collection or be treated for longer-term storage. Typically, harvested water is used with automated drip-type irrigation systems. To utilize the harvested water, landscaped areas such as raised planters or trees in planter boxes, could be added. These additions would provide greenery into this heavily developed core creating an amenity for employees and potentially helping to slow the rate of stormwater runoff by trapping water in foliage. Based on the limited amount of space for the addition of landscaped areas and use of harvested water, it is estimated that aggressively incorporating rain harvesting in Production Site 1 may reduce runoff leaving this area by three to ten percent. This estimated reduction in stormwater runoff may not be considered significant in the overall stormwater management; however, rainwater harvesting, properly designed with first-flush diverters, can provide for treatment, by filtration, of relatively high concentrations of pollutants in rooftop runoff (see Figure 7 for an example of a basic rainwater harvesting system).

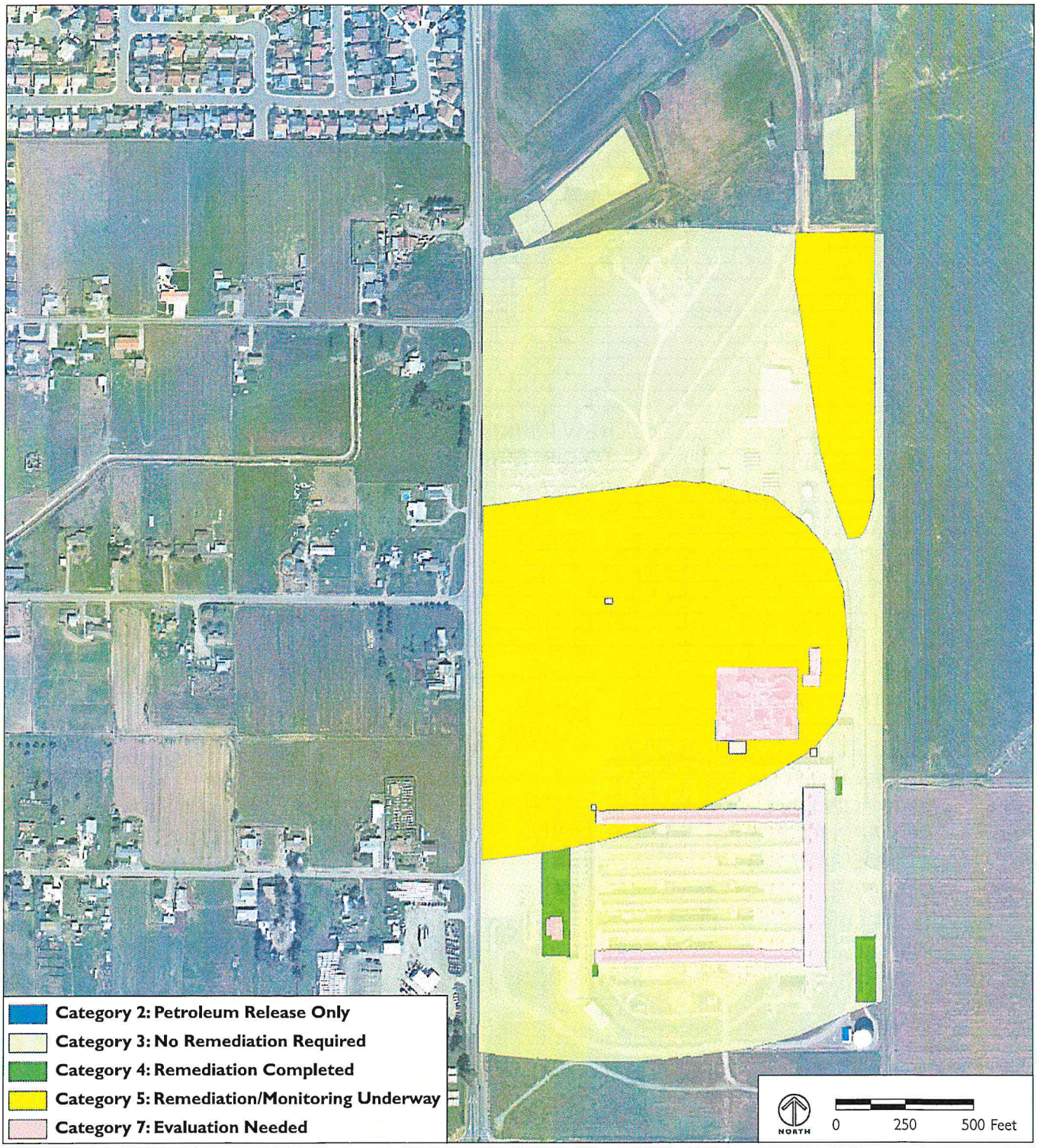
With elaborate harvesting systems that comply with applicable State, county and local plumbing codes, harvested water may be used as flushing water for toilets and industrial non-potable water uses. However, this would require



Source: Weston Solutions

FIGURE 5

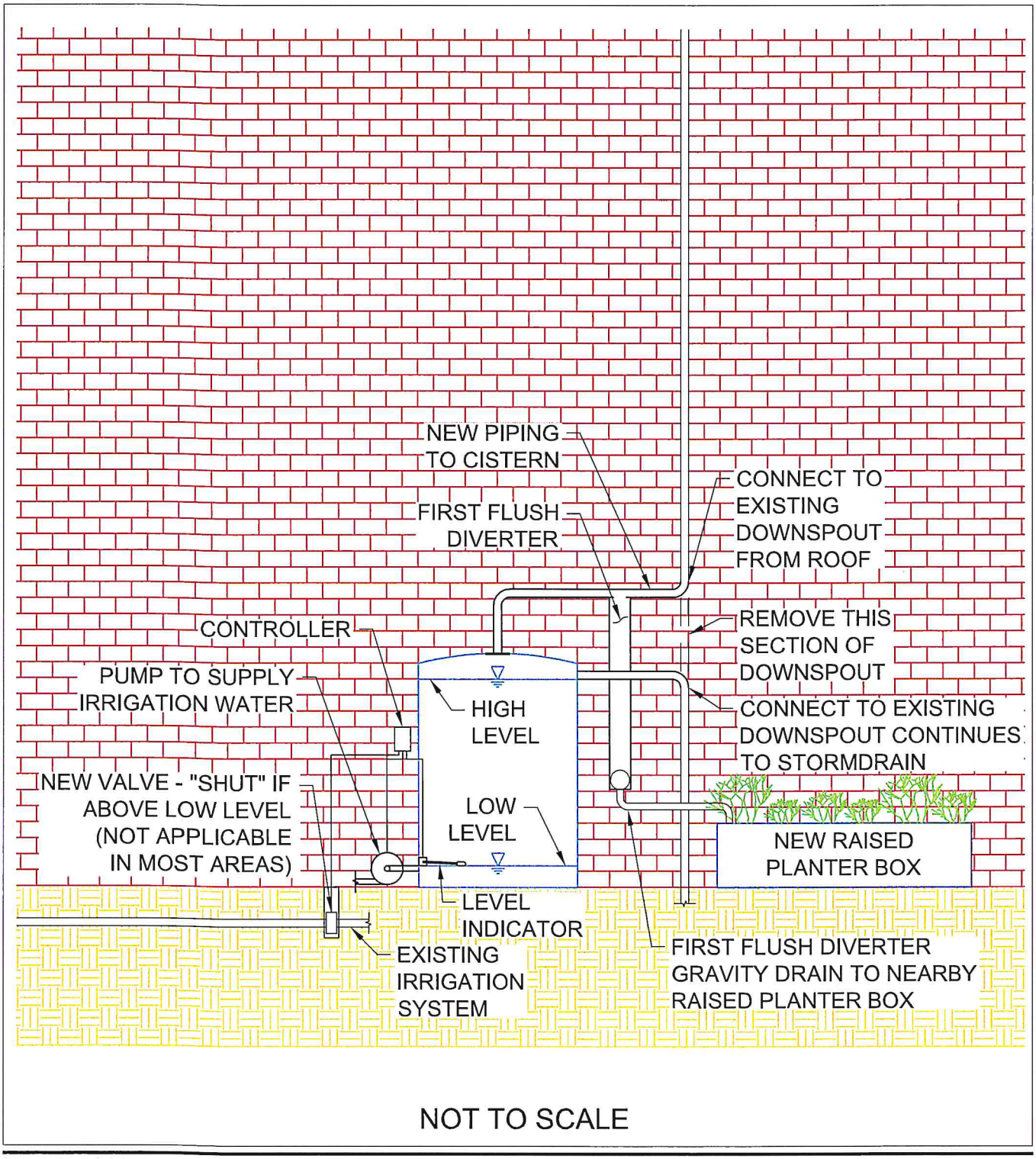
POTENTIAL LID COMPONENTS: PRODUCTION SITE 1



Map highlights the status of contamination assessments within RBAAP's boundaries.
Souce: CH2M Hill, 2006; CH2M Hill, 2008

FIGURE 6

ENVIRONMENTAL REMEDIATION REQUIREMENTS



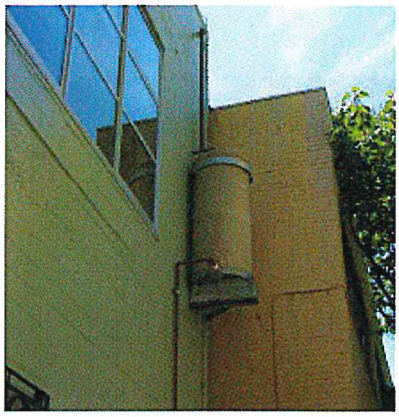
Source: Weston Solutions

FIGURE 7

RAINWATER HARVESTING SYSTEM

additional permitting and upgrades to the current infrastructure, which would most likely be cost prohibitive. An additional study focused on the beneficial uses of non-potable uses, existing water supply infrastructure, and permitting requirements should be conducted in the future if this type of re-use is strongly desired.

Structural analysis has indicated that few, if any, of the existing buildings could support solar panels or green roofs. The existing condition of the buildings on-site exclude them from being retrofitted with either of these options.



Rainwater cistern

2. Production Site 2

Production Site 2 is a continuation of the former ammunition plant on Production Site 1, located between Production Site 1 and the North End Cap as shown in Figure 8. The east portion of Production Site 2 is occupied by a landfill that has been covered with a clay cap. This area is baited with poison to preclude ground burrowing by rodents and other animals. Similar to the entirety of Production Site 1, the landfill covers an area with groundwater contamination. West of the landfill area are a few scattered buildings, aboveground propane storage tanks, railroad tracks, and parking lots. This area is characterized as having groundwater contamination "in which release, disposal, or migration of hazardous substances has occurred, but in concentrations that do not require a removal or other remedial response."[7] The area of the landfill is approximately 4.3 acres. The west portion of Production Area 2 is approximately 12 acres in size with roughly 60 percent impervious coverage.[8]

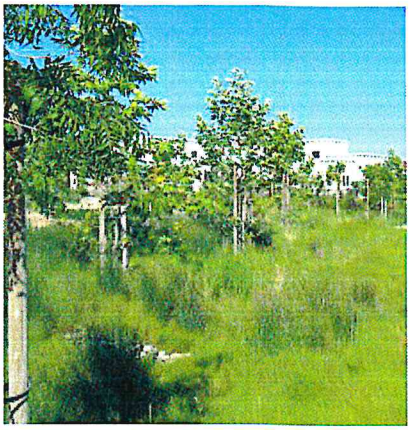
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[7] CH2M Hill, 2006, *Environmental Condition of Property Phase 1 Report, Riverbank Army Ammunition Plant*, Figure ES-1: Property Categorization Map.

[8] The presence of Polychlorinated Biphenols (PCB) contamination was identified in portions of this area. Remediation action is expected in the future to mitigate the PCB contamination. Once mitigation is complete, and subject to regulatory approval, the level of contamination is expected to be reduced to very low levels and should not affect the design and implementation of future LID features



Underground infiltration tanks.
http://www.treepeople.org/open-charter-school

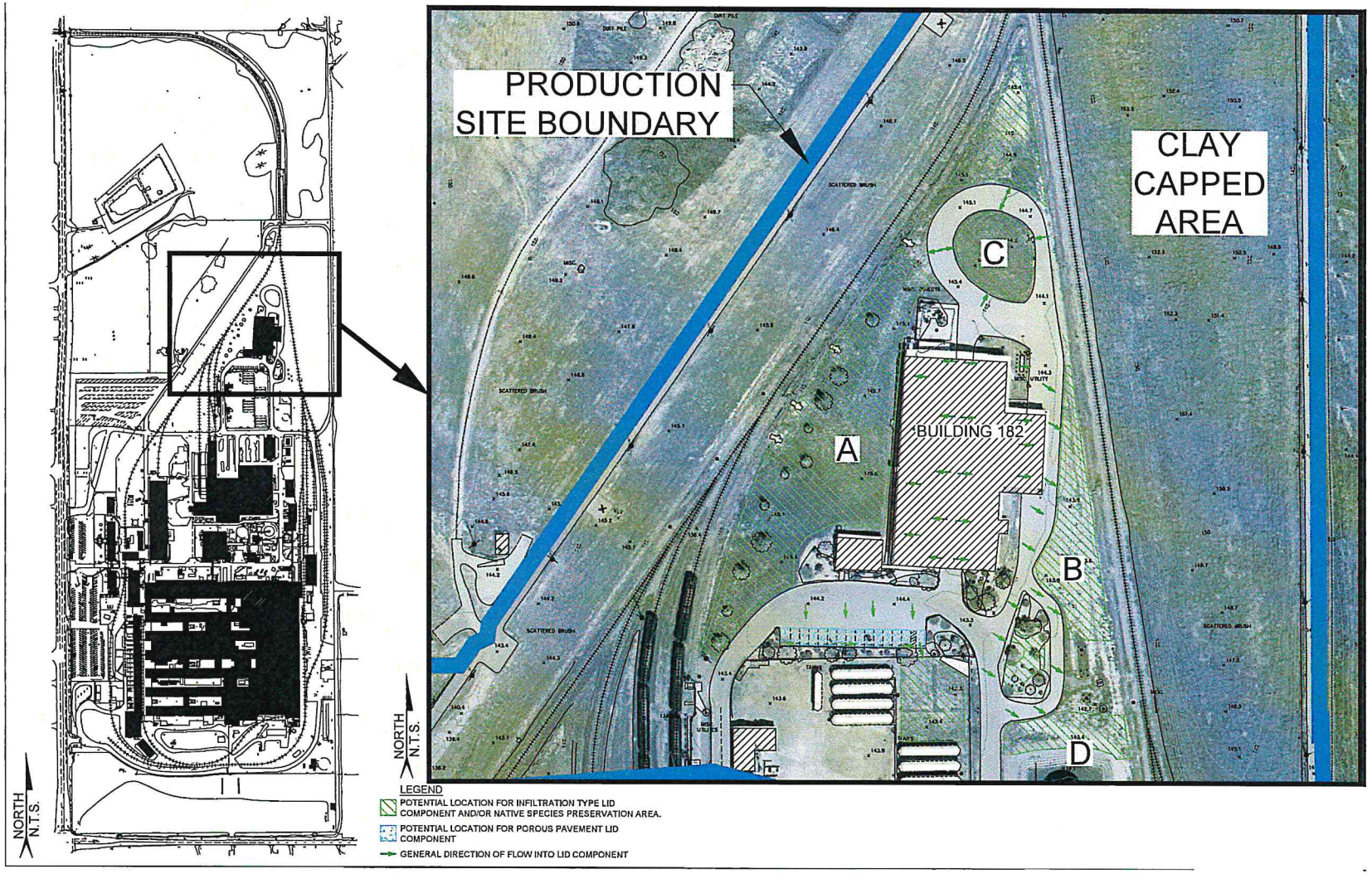


Bioretention basin

Stormwater runoff on the clay capped landfill is directed into ditches located on the east and west sides of the landfill area. Flows in the ditches travel to the south end of the landfill area and are conveyed into an underground 16-inch storm drain pipe that carries the flow to the west, into the main storm drain line and lift station located near Gate 10. Stormwater from the lift station flows north to another lift station and into the northwest stormwater reservoir. Stormwater in the west portion of Production Area 2 is collected in numerous inlets and pipe networks and flows to the above-mentioned lift station located near Gate 10, eventually reaching the northwest stormwater reservoir.

The clay cap covering the landfill area will remain intact in the future. Therefore, very limited options are available to reduce the amount of stormwater runoff leaving this area. Landscaping with amended soils to absorb the rainfall could be constructed above the landfill on top of the clay cap. This type of landscaping system would require a root barrier to protect the clay cap. However, this type of landscaping would most likely be cost prohibitive.

Stormwater runoff from the landfill area could be directed to an underground infiltration LID feature located on an adjacent part of the RAAP site. The existing storm drain system conveys stormwater runoff from the landfill area at a low elevation. Thus, if adequate separation from the water table can be maintained, underground storage/infiltration chambers may be constructed in the available property located west of the landfill (e.g. the unused parking lot or property that is vacated in the future, and thus, slated for redevelopment). This type of improvement could potentially be incorporated into conditions of approval for the redevelopment of the aboveground tank property. The cost of constructing the underground infiltrations tanks could be offset by reduction in the initial property cost (i.e. fair market price minus cost of underground infiltration tanks). Maintenance of said system would most likely be the responsibility of the City and require an agreement between the future property owner and the City.



Source: Weston Solutions

FIGURE 8

POTENTIAL LID COMPONENTS: PRODUCTION SITE 2

A second option for treating the stormwater runoff from the landfill area is to adjust the grading above the landfill to direct flows into an aboveground LID feature, such as an infiltration basin or bioretention basin. The grading above the landfill would include placing fill on top of the landfill, which would keep the clay cap intact. The new additional LID feature could be in an area currently occupied by landscaping on an adjacent property to the west of the landfill, see Letter D in Figure 8. This would require directing stormwater runoff under the railroad track located along the west side of the landfill and may require a structurally enhanced, reinforced concrete box culvert.


Permeable concrete parking lot stalls

The area west of the landfill appears to have ample space to incorporate LID features. Directly west of Building 182 is a large landscaped area, see Letter A in Figure 8, where infiltration basins and/or rain gardens could be constructed to collect and treat stormwater runoff from the roof, roadway, parking lot, and other impervious areas. The parking stalls in the parking lot located south of Building 182 could be replaced with a porous pavement section over existing soils.

There are opportunities for LID features along the existing access roads, see Letter B on Figure 8, to collect and infiltrate stormwater runoff. This may include converting existing landscape areas into infiltration basins, infiltration trenches, and/or rain gardens. The area encircled by the access road, see Letter C on Figure 8, north of Building 182, is one example of an area that could be converted into a large infiltration basin. If improvements to the existing roadways are completed as part of the site redevelopment, the improvements could incorporate LID features such as infiltration basins.

3. Production Site 3

Production Site 3 is an area formerly associated with the production of ammunition, located south of Production Site 1 and north of the South End Cap area (see Figure 9). Many of the buildings in this area are uniquely oriented toward custom manufacturing processes. While Production Site 3 suffers

from groundwater contamination, it is "in concentrations that do not require a removal or other remedial response."[9]

Stormwater runoff along the east boundary and southeast area of Production Site 3 drains into the southeast stormwater reservoir. A lift station pumps the runoff from the basin into the underground storm drain main piping. Stormwater runoff from the other areas of Production Site 3 is collected in a series of inlets and pipes connected to the main storm drain piping. In the main storm drain piping, the flows travel north, through Production Sites 1 and 2, reaching the 600 gpm lift station located near Gate 10. Stormwater from the lift station flows north to another lift station and into the northwest stormwater reservoir.



Vegetated swale catching parking lot runoff



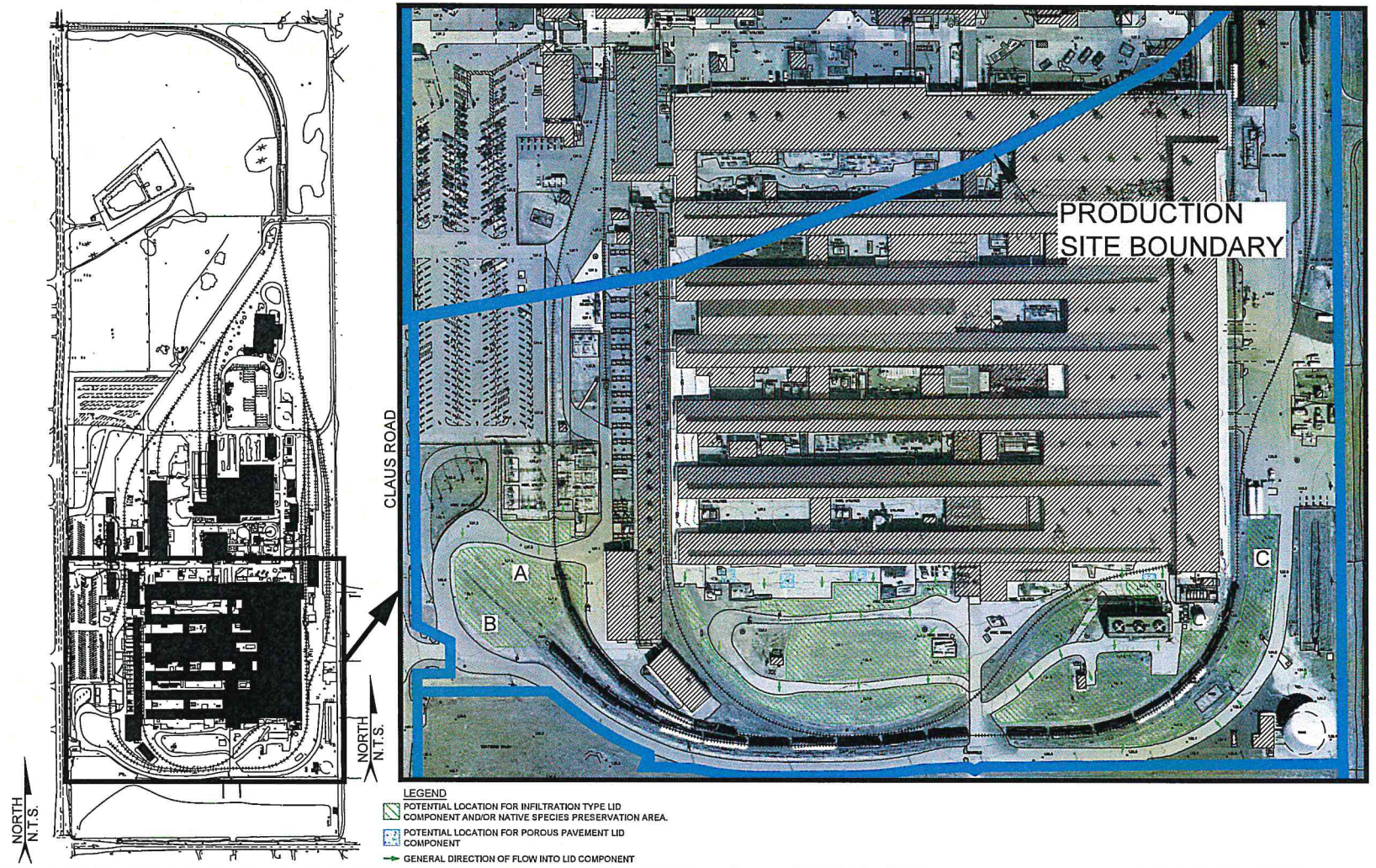
Stormwater planting

The northern portion of Production Site 3 is occupied primarily by buildings, access roads and parking lots. There may be opportunities to selectively remove hardscape and increase permeability around the buildings. Due to the significant amount of truck and trailer traffic, removal of hardscape will need to be limited to areas not associated with driveways and access roads. Impervious surfaces could be removed along walkways and replaced with a combination of landscaping and porous pavement. Areas within parking lots, such as parking stalls where existing inlets are located, could also be replaced with a porous material. Additionally, parking lots could be reconfigured to include infiltration basins and rain gardens.

A variety of rain catchment methods could be used to store stormwater runoff for irrigation and/or infiltration in Production Site 3. Redirection of rooftop runoff, including providing gutters to channel stormwater into cisterns and/or rain barrels, can be used successfully in this area with minimal cost. The harvested water could be used to provide irrigation to added landscape areas (see Figure 7 for an example of a rainwater harvesting system).

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[9] CH2M Hill, 2006, *Environmental Condition of Property Phase 1 Report, Riverbank Army Ammunition Plant*, Figure ES-1: Property Categorization Map.



Source: Weston Solutions)

FIGURE 9

POTENTIAL LID COMPONENTS: PRODUCTION SITE 3

The southern area of Production Site 3 is generally unoccupied by buildings and has greater opportunities to incorporate LID features. Directly south of Building Group 6 are open space areas where infiltration basins and/or rain gardens could be constructed to collect and treat stormwater runoff from the roof, roadway, parking lot, and other impervious areas. Portions of this undeveloped land could be planted with native vegetation, in conjunction with removal of exotic invasives.

There are opportunities for LID features along the existing access roads to collect and infiltrate stormwater runoff, see Letters A through C on Figure 9. This could include creating several small infiltration basins adjacent to each side of the roadways. Larger basins could be constructed in the areas west and south of Building 108. If improvements to the existing roadways are completed as part of the site redevelopment, the improvements could incorporate LID features such as parkway infiltration basins.



Vegetated swale collecting roadway runoff

If the area around the southeast stormwater reservoir is redeveloped, the reservoir should be enlarged to provide additional volume for temporary storage and surface area for infiltration.



Rain garden along a roadway with sidewalk separation

4. South End Cap

The South End Cap is located south of Production Site 1 and immediately north of Claribel Road as shown in Figure 10. This area is currently undeveloped and could offer convenient access from Claribel Road. A wide range of LID approaches can be used in this are, as there are no existing contamination issues identified that preclude maintaining a high degree of site permeability. Proposed buildings can incorporate green roofs, gutter systems that connect to a variety of rainwater catchment systems, or with disconnected downspouts dispersing into infiltration basins and / or rain gardens. Planter boxes, raised planters, native vegetation, reduced hardscape, pervious pavement parking stalls and walkways, and natural drainage are other examples of typical LID features that could be incorporated into site plans. Proposed roadways for this area could also incorporate LID features such as parkway landscaped infiltration basins, infiltration trenches, and/or rain gardens.



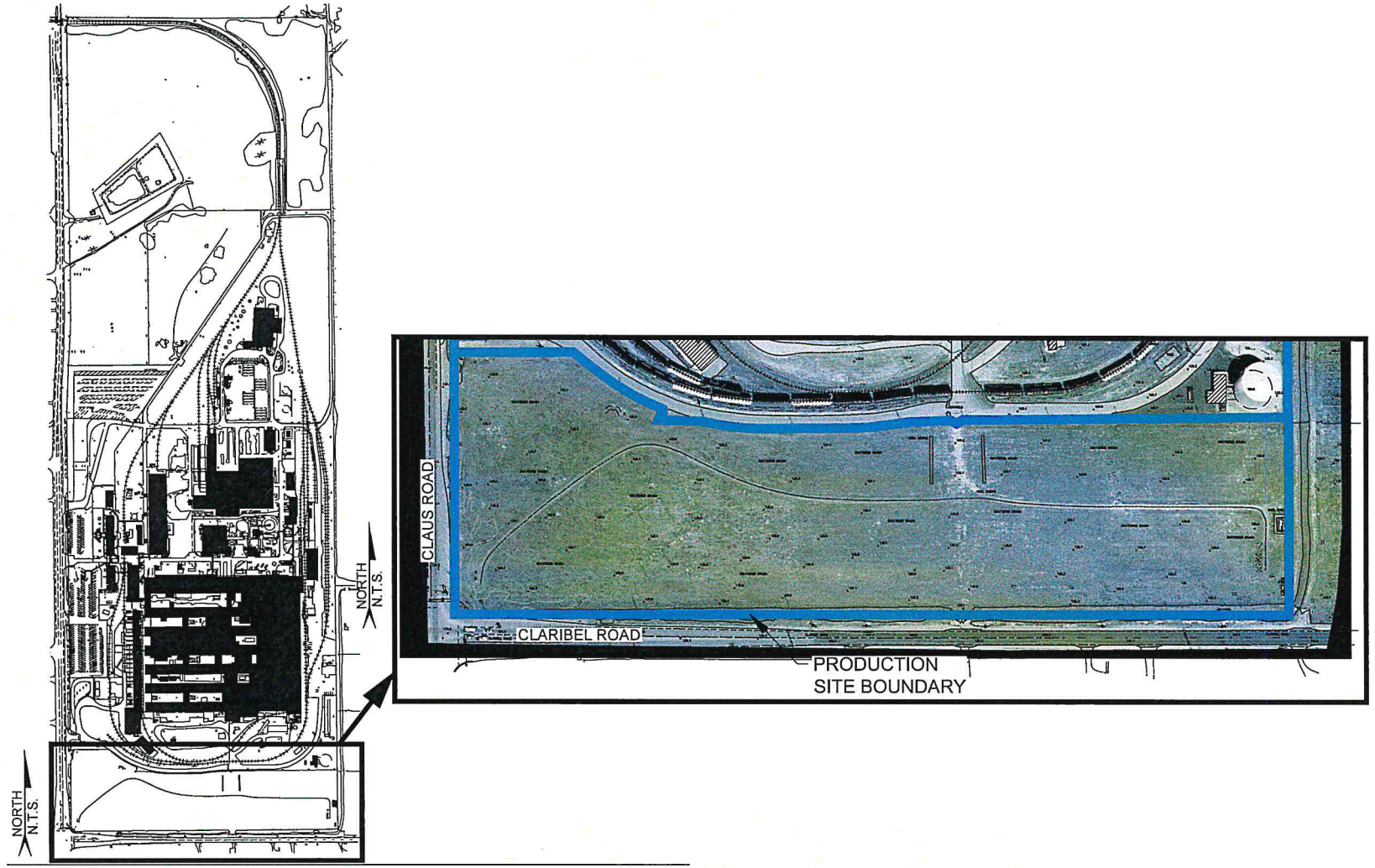
Permeable concrete parking lot

Based on the location of this area and the existing topography, which slopes slightly towards the south, conveying stormwater runoff from this area to the northwest stormwater reservoir presents several challenges. These include the energy that would be required to pump excess stormwater runoff and the difficulty of constructing new storm drain piping through existing improvements. Therefore, site plans should provide for the collection, storage and infiltration on-site of the stormwater runoff for the flood control design storm by using underground infiltration chambers and/or aboveground infiltration basins. These storm drainage storage facilities should be designed in accordance with the Stanislaus County Department of Public Works Standards and Specifications, 2007 Edition or as updated, to hold runoff resulting from the 50-year or greater storm events. To reduce the amount of runoff, and thus the size and costs of constructing and maintaining infiltration systems, site plans should maximize the amount of pervious surface and, where possible, create separation between impervious surfaces to allow for infiltration.

5. North End Cap

The North End Cap is the most northern part of the site, bound on the north by railroad lines and split into thirds by the Oakdale Irrigation Canal and the Hetch Hetchy Aqueduct, as shown in Figures 2 and 11. The Canal and the Aqueduct are closed systems located underground. The Oakdale Irrigation Canal and Hetch Hetchy Aqueduct are on their own parcels which include buffers. Positive drainage away from these existing utilities and easements will need to be maintained. Therefore grading plans should incorporate the established elevations over and adjacent to the utilities, and in general, follow the existing topography of the site. The area of the North End Cap located south of the northwest reservoir has groundwater contamination "in concentrations that do not require a removal or other remedial response."[10]

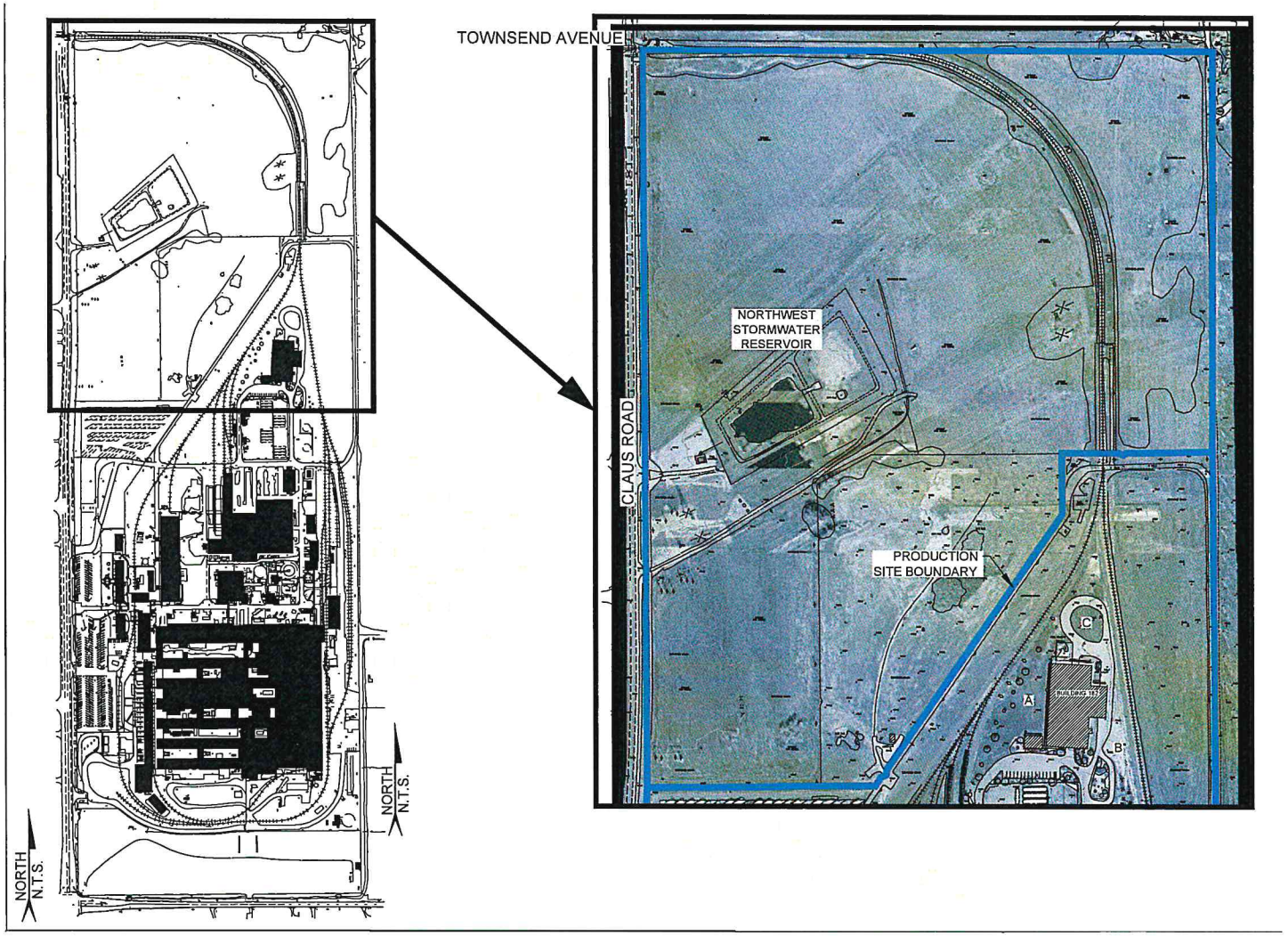
[10] CH2M Hill, 2006, *Environmental Condition of Property Phase 1 Report, Riverbank Army Ammunition Plant*, Figure ES-1: Property Categorization Map.



Source: Weston Solutions

FIGURE 10

POTENTIAL LID COMPONENTS: SOUTH END CAP



Source: Weston Solutions

FIGURE 11

POTENTIAL LID COMPONENTS: NORTH END CAP

Stormwater runoff on the North End Cap areas flows towards the southwest. The parking lot current occupied by Leisure RV Storage is slightly elevated and runoff ponds in the adjacent vacant area prior to infiltration and evaporation. The northwest stormwater reservoir, the associated lift station, and the 36-inch conveyance storm drain pipe are located within the North End Cap. The northwest stormwater reservoir will continue to operate until LID and stormwater infrastructure improvements within the Production Sites eliminate its need. Extensive redevelopment of the Production Sites, which is not anticipated in the foreseeable future, would be required to address stormwater infrastructure improvements sufficient for the removal of the northwest stormwater reservoir. Access easements for the pipeline associated with the reservoir could be granted to the party responsible for maintaining the on-site storm drain system when the property is sold in the future.



Permeable pavers a type of porous pavement

A variety of LID approaches can be incorporated into the future development of the North End Cap area. Buildings can incorporate green roofs, gutter systems connecting to a variety of rainwater catchment systems or with disconnected downspouts dispersing into infiltration basins and/or rain gardens. Planter boxes, raised planters, preserved native vegetation, reduced hardscape, pervious pavement parking stalls and walkways, and natural drainage are other examples of typical LID features that should be incorporated into site plans. Another important and often overlooked LID feature associated with new development is site layout to minimize the amount of connected impervious surfaces. By reducing the connected impervious surfaces, the amount of stormwater runoff generated on-site is reduced and the time of concentration is increased, which in turn reduces the overall peak storm event flow and the amount of temporary storage volume required to collect runoff. The time of concentration is the time for water to travel from the most hydraulically distant point and is dependent on length, slope and ground cover. Proposed roadways for this area could also incorporate LID features such as parkway landscaped infiltration basins, infiltration trenches, and/or rain gardens. Proposed sidewalks should be separated from the roadway curb and drain towards the parkway. Landscaped infiltration basins or rain gardens can be constructed within the roadway adjacent to road side parking stalls. Addi-



Underground infiltration chambers
http://www.treepeople.org/open-charter-school

tionally, if bike lanes are part of proposed roadways, they could be constructed with a porous pavement section over native soils.

Ideally, site development on the North End Cap should include LID features designed to capture, temporarily store, and infiltrate on-site the stormwater runoff for the design flood control storm event. This can be achieved using a combination of LID features throughout the site and by having features where storm drain pipes daylight such as underground infiltration chambers and/or aboveground infiltration basins. Underground infiltration chambers can be constructed beneath parking lots or landscaped areas. These devices have a high initial cost and require maintenance on a regular basis. The initial costs of infiltration basins are less than underground devices. Additionally, basins, if designed properly, can be incorporated into and maintained as part of the site landscaping. However, infiltration basins require adequate space to store and infiltrate stormwater runoff in a manner that does not create vector control issues. Vector control is the control of an organism, usually an insect, which carries and transmits disease-causing organisms such as the mosquito and the West Nile Virus.

The North End Cap properties may be less attractive to potential developers if capture and infiltration of flood control volumes is required. A second option for management of stormwater runoff from the North End Cap is to construct a second lift station, or increase the capacity of the existing lift station adjacent to the northwest stormwater reservoir, so that stormwater can be directed to an expanded northwest reservoir. However, this would result in less developable land around the reservoir and prevent its future removal.

F. Summary of Recommendations

The following sustainable practices should be implemented as part of new development or improvements to the RAAP site. These recommendations include a variety of practices that support LID, including stormwater improvements as well as other measures. These practices can be implemented

immediately or can be phased in over time. It is anticipated that a Stormwater Master Plan will be developed for RAAP that further refines and implements these recommendations.

Production Site 1

- Construct precast planter boxes to provide landscaped areas where possible. Impervious surfaces should remain in place throughout Production Site 1.
- Redirect rooftop runoff into cisterns and/or rain barrels. This may require the construction of new gutters.

Production Site 2

- Convert portions of the landscaped area located west of Building 182 into landscaped infiltration basins and/or rain gardens.
- Redirect rooftop runoff into infiltration basins, rain gardens, cisterns and/or rain barrels. This may require the construction of new gutters.
- Replace impervious pavement within parking stalls of the parking lot located south of Building 182 with pervious pavement.
- Construct landscaped infiltration basins, infiltration trenches, and/or rain gardens along existing roadways.
- Include LID features in future roadway improvements.
- Incorporate infiltration basins or underground infiltration chambers to capture stormwater runoff from the capped landfill area. This may require remedial grading above the capped landfill.

Production Site 3

- Convert portions of the undeveloped area located south of Building 6 into landscaped infiltration basins and/or rain gardens. Portions of this undeveloped land could be planted with native vegetation in conjunction with the removal of exotic invasives.

- Redirect rooftop runoff into infiltration basins, rain gardens, cisterns and/or rain barrels. This may require the construction of new gutters.
- Remove hardscape selectively and increase permeability around buildings. Impervious surfaces may be removed along walkways and replaced with a combination of landscaping and porous pavement.
- Construct landscaped infiltration basins, infiltration trenches, and or rain gardens along existing roadways. Construct landscape infiltration basins in the area south of Building 108.
- Increase capacity of the southeast stormwater reservoir if possible.
- Include LID features in future roadway improvements.

South End Cap

- Incorporate green roofs into new buildings.
- Connect gutter systems to a variety of rainwater catchment systems, or have disconnected downspouts dispersing into infiltration basins and/or rain gardens.
- Incorporate LID features into site plans, including planter boxes, raised planters, native vegetation, reduced hardscape, pervious pavement parking stalls and walkways, and natural drainage.
- Minimize the number of connected impervious surfaces.
- Include LID features into roadway improvements.
- Collect, temporarily store, and infiltrate stormwater runoff from the flood control design storm on site.

North End Cap

- Incorporate green roofs into new buildings.
- Connect gutter systems to a variety of rainwater catchment systems, or have disconnected downspouts dispersing into infiltration basins and/or rain gardens.

- Incorporate LID features into site plans, including planter boxes, raised planters, native vegetation, reduced hardscape, pervious pavement parking stalls and walkways, and natural drainage.
- Minimize the number of connected impervious surfaces.
- Include LID features into roadway improvements.
- Collect, temporarily store, and infiltrate stormwater runoff from the flood control design storm on-site. Alternatively, expand the northwest stormwater reservoir to provide capacity for stormwater runoff from new development in the North End Cap area.

Existing Infrastructure Verification

- Verify the capacities of the lift station. Perform detailed hydrology analysis to identify existing infrastructure shortfalls, and provide recommendations for upgrades, where applicable.
- Conduct percolation testing around the site to support the design and implementation of infiltration basins.
- Evaluate existing railroads to determine existing and future potential uses, and implement a plan to remove tracks with no current or future uses.

G. *Additional Resources*

The following references provide a variety of specific information that may be helpful in future development of LID strategies.

- **Environmental Protection Agency Links**
  - EPA: Low Impact Development (LID) and Other Green Design Strategies
    http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=124
  - Low Impact Development links can be found at www.epa.gov/nps/lid/

- EPA Stormwater Technology Fact Sheet Porous Pavement www.epa.gov/npdes/pubs/porouspa.pdf
- More information about the National Pollutant Discharge Elimination System (NPDES) is available at http://cfpub.epa.gov/npdes/index.cfm

♦ **California State Water Resources Control Board Links**

- Best Management Practices (BMP) Database www.waterboards.ca.gov/water_issues/programs/stormwater/bmp_database.shtml
- Fact sheet for the NPDES General Permit is available at www.swrcb.ca.gov/water_issues/programs/stormwater/docs/final_ms4_permit.pdf

♦ **Stanislaus County Links**

- The Stanislaus County Stormwater Pollution & prevention Program home page can be found at www.stancounty.com/publicworks/storm/index.shtm
- Specific requirements of a SWPPP are not discussed in this document. More information can be found in the Stanislaus County Storm Water Management and Discharge Control Ordinance. www.stancounty.com/publicworks/storm/pdf/storm-water-mgmt-discharge-control-ordinance.pdf

♦ **C.3 Links**

- Until Stanislaus County completes its manual, it is recommended that site development at RAAP comply with section C.3 of the NPDES Permit developed for the San Francisco Bay region available at www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/mrp.shtml
- Several Bay Area Counties have developed guidebooks and tools outlining LID stormwater techniques to help projects comply with San Francisco Bay Region C.3 requirements.
  - Contra Costa Clean Water Program Stormwater C.3 Guidebook September 10, 2008 www.ccleanwater.org/Publications/Guidebook/Stormwater_C3_Guidebook_4th_Edition_9-10-08.pdf

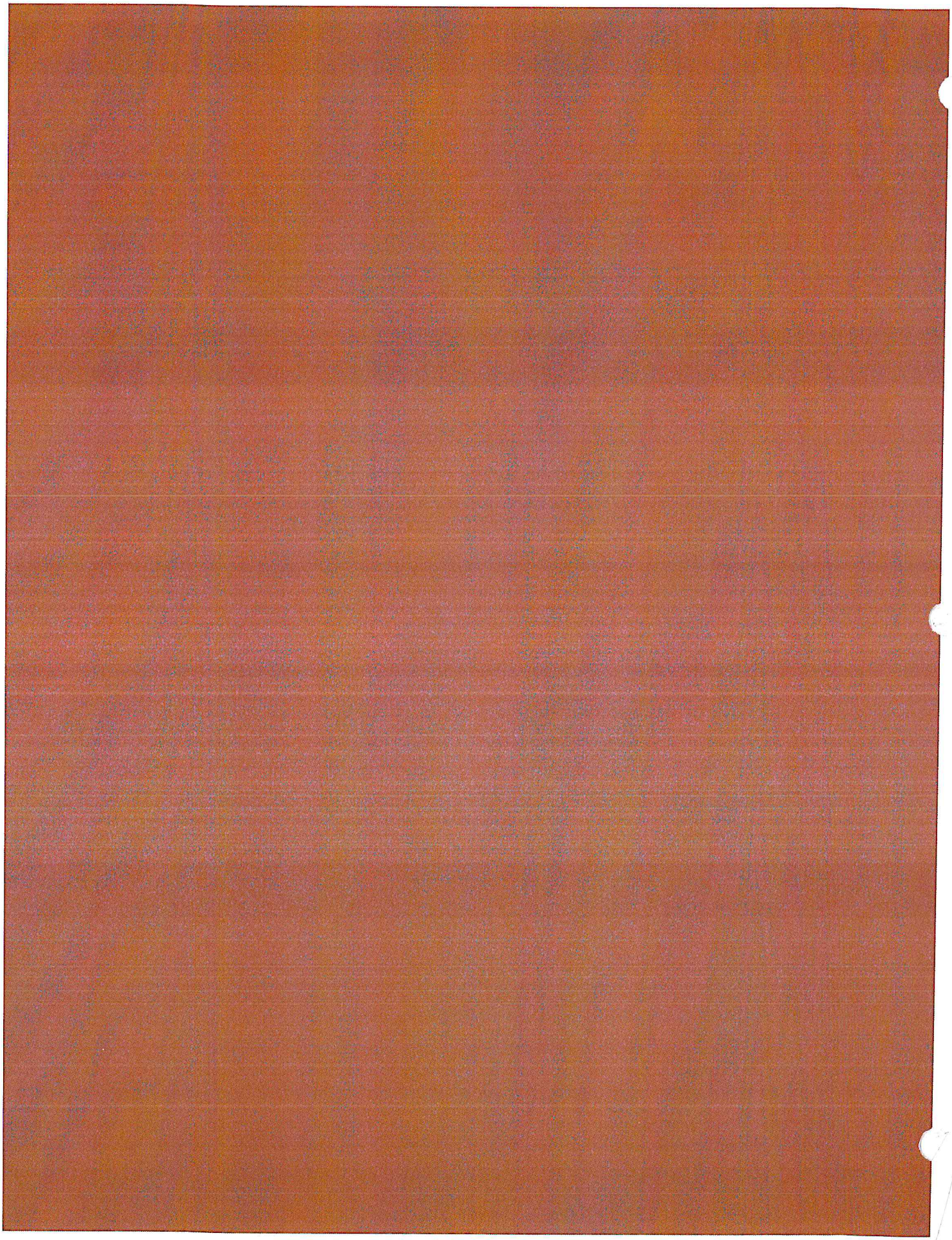
- Alameda Countywide Clean Water Program c.3 Stormwater Technical Guidance www.cleanwaterprogram.org/uploads/ACCWP_C3_Technical_Guidance_090506-300dpi.pdf
- City of Emeryville Stormwater Sizing Worksheet www.ci.emeryville.ca.us/planning/sizing_worksheet_v8.xls

◆ **Other LID Links**

- Low Impact Development Center www.lowimpactdevelopment.org
- Stormwater Manager's Resource Center www.stormwatercenter.net
- LID Urban Design Tools, www.lid-stormwater.net
- California Stormwater Quality Association, www.cabmphandbooks.com
- Low Impact Development Technical Guidance Manual for Puget Sound January 2005 www.psp.wa.gov/downloads/LID/LID_manual2005.pdf
- Guidelines for the Standard Urban Storm Water Mitigation Plan Storm Water Best Management Practices for New Development and Redevelopment For the Santa Rosa Area and Unincorporated Areas around Petaluma and Sonoma, June 3, 2005 www.sonoma-county.org/prmd/sw/pdf/susmp.pdf
- Santa Clara Valley Urban Runoff Pollution Prevention Program www.scvurppp-w2k.com/default.htm

APPENDIX E:

FINAL PARKING ANALYSIS



FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: November 16, 2010

To: Jeff Williams, Design, Community & Environment

From: Kathrin Tellez

Subject: ***Riverbank Army Ammunition Plant Parking Assessment***

WC09-2656

This memorandum presents the findings of a parking study conducted for the Riverbank Army Ammunition Plant (RAAP) in Riverbank, California. Parking demand for the existing tenants was documented at varying times of day/week to assess existing parking demand characteristics. The results were used to estimate the parking supply needed for proposed tenants of the vacant portion of the site. Approximately 215,000 square feet of the existing 673,625 square feet of building area is currently occupied with industrial uses, with approximately 90 employees over two shifts. With occupation of the vacant portion of the site, the total employment is expected to increase to 550 employees over two shifts.

Based on this assessment, additional parking supplies would be needed to meet peak parking demand. Reconfiguring the existing parking lots and adding additional parking in currently unused areas of the site would increase the on-site parking supply from approximately 260 spaces to approximately 500 spaces. The resulting parking supply would be generally sufficient to accommodate projected peak parking demands; however, parking shortages may be experienced during shift change times. Strategies to alleviate parking shortages include staggering shifts, restricting parking in one area to second shift employees only during certain times of day, and promoting ridesharing and alternative modes of travel.

The following presents our Project Understanding, Existing Parking Conditions, Future Parking Conditions, and Recommendations.

PROJECT UNDERSTANDING

The developed portion of the RAAP is located on a 146-acre site in the northeast quadrant of the Claus Road/Claribel Road intersection in the City of Riverbank, as shown on **Figure 1**. (An undeveloped 23-acre portion of the RAAP located on the Stanislaus River was not included in this analysis.) The existing RAAP currently contains approximately 673,625 square feet of industrial building area, of which approximately 215,000 square feet is occupied. The current tenant operates two shifts with 60 to 65 employees in the first shift and 25 employees in the second shift. Of the employees in the first shift, approximately 45 are in manufacturing, while the remaining employees are office workers, security, facility maintenance (provided by EMCOR Group, Inc.) and dispatch (for Storer Transit Systems).

100 Pringle Avenue, Suite 600 Walnut Creek, CA 94596 (925) 930-7100 Fax (925) 933-7090
www.fehrandpeers.com

Occupation of the vacant square footage is proposed by an industrial user that would contain manufacturing/production uses as well as security, office and maintenance uses. At full occupancy, it is expected that 400 total employees would be at the RAAP during the day, with an additional 150 employees on a second shift, for a total employment of 550. Of the employees on the day shift, approximately 80 percent would be in production/manufacturing, and the remaining 20 percent would be security, office and maintenance employees. For the second shift, it is expected that 98 percent of employees would be in production/manufacturing and the remaining would be maintenance.

EXISTING CONDITIONS

This section discusses the existing parking conditions, including the supply and demand characteristics.

Parking Supply

There are currently three parking areas at the RAAP, totaling approximately 260 marked spaces, as shown on **Figure 2.** Table 1 presents the number of spaces by type (regular, visitor, ADA accessible, and motorcycle/other) and the total number of spaces for each area. Access to the parking areas is provided by one driveway off Claus Road, located approximately 500 feet south of Minnear Avenue and 500 feet north of Davis Avenue. A second driveway, which provides access to the truck scales and the internal roadway network, is located north of the main driveway. A third driveway is located on Claus Road, south of the main driveway – this driveway is currently closed.

TABLE 1
EXISTING PARKING SUPPLY SUMMARY (BY TYPE OF SPACE)

Parking Area	Regular	Visitor	ADA[1] Accessible	Motorcycle/ Other[2]	Total
Area 1	42	6	0	19	67
Area 2	69	0	6	1	76
Area 3	117	0	0	0	117
Total	228	6	6	20	260

Notes:
1. Americans with Disability Act (ADA) accessible stalls.
2. Unmarked or motorcycle parking.

Source: Fehr & Peers, 2010.

Use of the parking area is constrained by the placement of power poles and utility boxes within the main parking field. Some of the obstacles are barricaded, while others are in the middle of drive aisles. The location of these obstacles is noted on Figure 2.

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Data Collection

A parking occupancy survey was conducted to determine the parking demand at various times of the day/week to document the peak parking demand of the existing tenants. Fehr & Peers staff recorded the number of parked vehicles at the RAAP at 9:30 AM, 11:30 AM, 1:30 PM, and 3:30 PM on Wednesday, September 8th and Thursday, September 9th as summarized in Table 2. Parking demand for distinct user groups was documented, including vehicles parked in marked visitor and Americans with Disability Act (ADA) accessible stalls, as well as motorcycle parking. Parking demand was also separated by lot, which indicates Parking Area 3 is not highly used, and the parking demand fairly evenly split between Parking Areas 1 and 2. Parking data by lot is attached.

TABLE 2
PARKING SURVEY SUMMARY

Date	Time	Regular	Visitor	ADA[1] Accessible	Motorcycle/ Other	Total
Wednesday, September 8th	9:30 AM	53	5	1	4	63
	11:30 AM	50	5	1	5	61
	1:30 PM	50	5	2	7	64
	3:30 PM	51	5	2	5	63
Thursday, September 9th	9:30 AM	51	5	1	4	61
	11:30 AM	53	6	1	3	63
	1:30 PM	59	6	1	3	69
	3:30 PM	60	5	1	2	68

Notes:
1. Americans with Disability Act (ADA) accessible stalls.

Source: Fehr & Peers, 2010.

Peak general parking demand was observed on Thursday afternoon at 3:30 PM, with a demand of 60 regular or unrestricted parking spaces. Peak visitor parking demand was six vehicles, with average visitor parking demand of five vehicles. Americans with Disability Act (ADA) accessible stall demand ranged between one and two vehicles. Motorcycle parking demand ranged between two and seven vehicles. The overall peak parking demand of 69 occupied stalls was observed at 1:30 PM.

Parking Demand Rates

Parking demand rates expressed as parking spaces per employee were calculated based on the number of employees in the first shift and the average peak demand (by space type), over the two days of data collection, as presented in Table 3. The number of employees, instead of the square footage of occupied building area, was selected as the variable to base parking calculations, as the number of employees that could occupy a set square footage could vary significantly and the number of employees is typically a better predictor of parking demand when that data is available.

Additionally, data presented in the Institute of Transportation Engineers publication *Parking Generation,* 4th Edition was reviewed for uses similar to the existing RAAP tenants, including manufacturing, office (which includes research and development), and warehousing. Data contained in *Parking Generation* is based on multiple surveys conducted at numerous locations across the United States.

TABLE 3
RAAP SPECIFIC
PARKING DEMAND RATES PER EMPLOYEE

Condition	Regular	Visitor	ADA Accessible	Motorcycle	Total
Average Peak Parking Demand	56	6	2	5	68
Demand Rate per Employee	0.86	0.09	0.03	0.08	1.06
Maximum Peak Parking Demand	60	6	2	7	75
Demand Rate per Employee	0.92	0.09	0.03	0.11	1.15

Source: Fehr & Peers, September 2010.

As shown in Table 3, the average RAAP parking demand rate is 1.06 spaces per employee. This accounts for employee parking demand, as well as demand from visitors and others on the site. The maximum observed parking demand rate was 1.15 spaces per employee. The calculated average and maximum rates consider the average and peak occupancy of the distinct parking user groups, as the parking for one group, such as ADA accessible parking, cannot be used to serve the parking demands of another group.

Parking demand rates per employee from the RAAP surveys and from *Parking Generation* are presented in Table 4 for comparison purposes. This comparison shows that the average peak observed rate for RAAP is higher than for other similar uses. The maximum observed RAAP rate is slightly lower than the maximum documented rate for other similar uses.

TABLE 4
PARKING DEMAND PER EMPLOYEE
RATE COMPARISON

Source/Land Use Type	Average	Max
RAAP Specific	1.06	1.15
ITE Manufacturing	0.97	1.22
ITE Office	0.83	1.35
ITE Warehousing	0.78	1.16

Source: *Parking Generation,* 4th Edition, Institute of Transportation Engineers, Fehr & Peers, September 2010.

Since the collected data is representative of the site, its location, and the proposed uses, as well as the mode choices of the local labor pool, the RAAP specific rates were selected to estimate parking demand with the planned employment increases.

FUTURE PARKING DEMAND ASSESSMENT

The average and maximum observed parking demand rates by user group were applied to the proposed number of employees with full occupancy of the site. The resulting parking demands are presented in Table 5.

TABLE 5
FUTURE PARKING DEMAND ESTIMATES[1]

Number of Employees	Regular	Visitor	ADA Accessible	Motorcycle	Total
Average	345	37	12	31	425
Maximum	369	37	12	43	462

Notes:
1. Based on 400 employees in the first shift.

Source: Fehr & Peers, 2010.

With the employment increases to 400 on the first shift, the peak parking demand is expected to be 425 spaces and could be as high as 462 spaces. Based on the data from other similar uses, it is likely that the average parking demand per employee could decrease as the site achieves more operational efficiencies with a larger employee pool, including increased opportunities for carpooling. Also, there is likely to be fewer visitors per employee, a consolidation of deliveries, and alternative work schedules for office employees that could reduce the number of people on site at any given time. Therefore, it is expected that typical peak parking demand would be closer to 425 spaces than 462 spaces.

As the RAAP is an employment center, a circulation efficiency factor of approximately 5 to 10 percent is recommended. Circulation efficiency allows drivers to enter a parking lot and find an available parking space without re-circulating through the parking aisles in search of a limited

number of available spaces. This also provides a parking supply buffer for periodic increases in parking demand.

Based on the expected parking demand and the provision of a circulation efficiency factor, it is recommended that between 468 and 500 parking spaces be provided with first shift employment levels of 400. To accommodate this level of parking supply, modifications to the existing parking scheme are recommended.

RECOMMENDATIONS

Based on the projected level of parking demand with the expected level of employment increases, a conceptual parking layout of the existing parking areas was prepared, as shown in **Figure 3**. Restriping of the existing three parking fields is recommended in addition to providing a fourth parking area in the northern portion of the site. This parking scheme considers the location of utilities within the existing parking field to minimize their effect on vehicle circulation.

The conceptual plan provides approximately 504 parking stalls, including 464 standard stalls, 10 ADA accessible stalls, 6 compact stalls, 20 motorcycle stalls, and 4 semi-truck stalls. The Americans with Disability Act requires that for parking lots with 500 or more parking spaces, 2 percent of the parking supply be ADA accessible, or 10 spaces for the potential level of parking supply that could be accommodated at the RAAP. Additional ADA parking could be provided if conditions warrant.

Modifying the northern portion of the site adjacent to the truck scale area to provide additional parking supplies is also recommended. Approximately 74 parking spaces could be provided in the area west of the truck scale – minimizing conflicts between parked vehicles and large trucks. Additional lighting may need to be added in this area and a pedestrian path should be designated between the parking area and main building entrance.

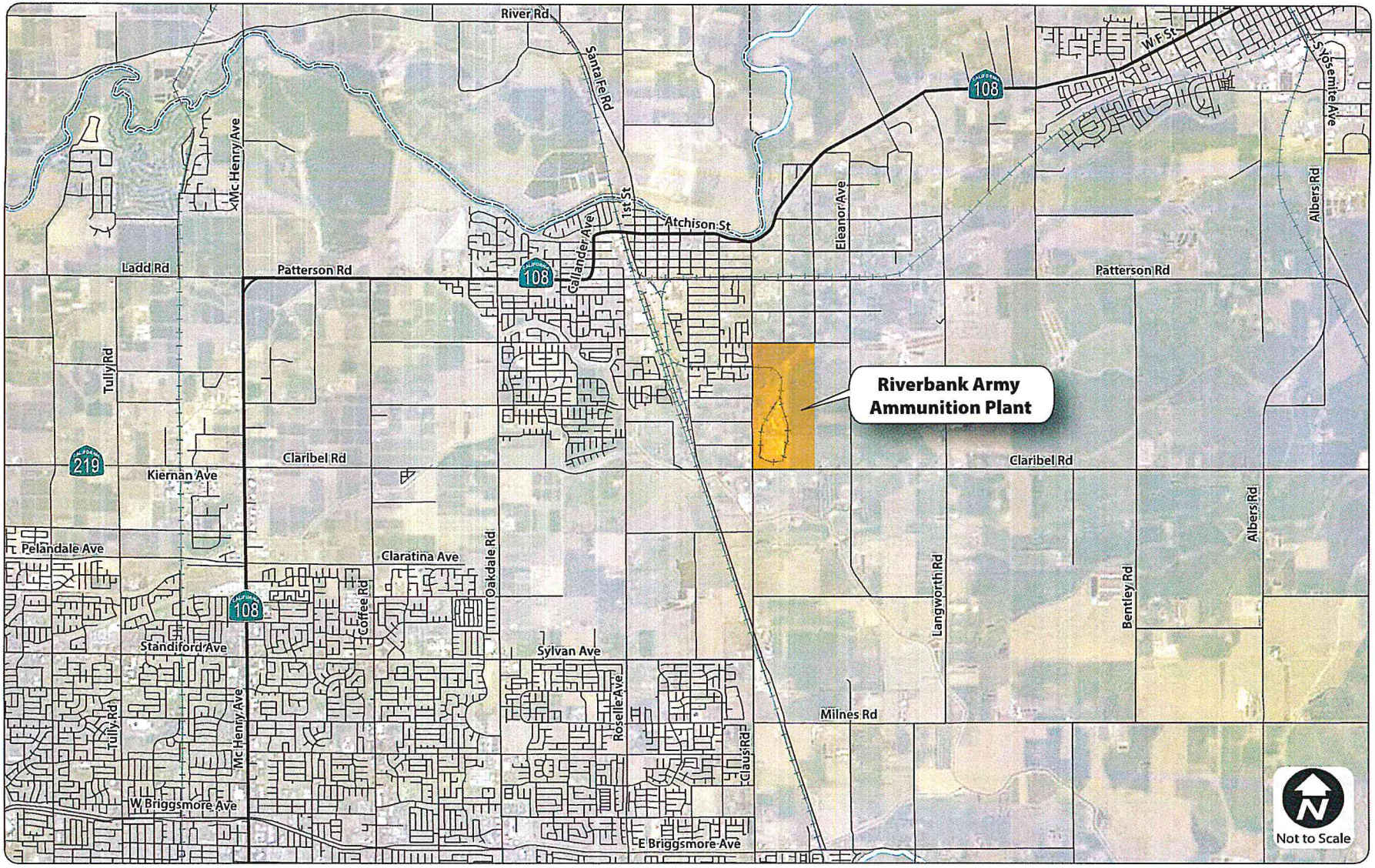
The parking supply in the southern portion of the site was designed to allow the southern driveway to be re-opened, if necessary. Should this driveway not be re-opened, additional parking spaces could be added in this area.

The recommended parking supply of 500 spaces is expected to accommodate the peak parking demand on a typical day with 400 employees. However, parking shortages could occur during shift change times if 150 second shift employees arrive while first shift employees are still present. To minimize the potential impact during shift change, the following strategies are recommended:

- Designate preferential parking spaces (those located closest to the building entrance) for carpools to encourage ridesharing, thereby reducing parking demand
- Implement rolling shift changes, such as two day shifts with staggered start times and end times such that at least 150 day shift employees have left the site by the time the second shift arrives

- Designate one parking area for second shift employees parking for a period of time until the remaining lots are cleared of first shift employees
- Encourage use of alternative modes to access the site, such as bicycling.

As additional development is planned on the RAAP, additional parking supplies would need to be provided. This concludes our parking demand study. Please call Kathrin if you have any questions.



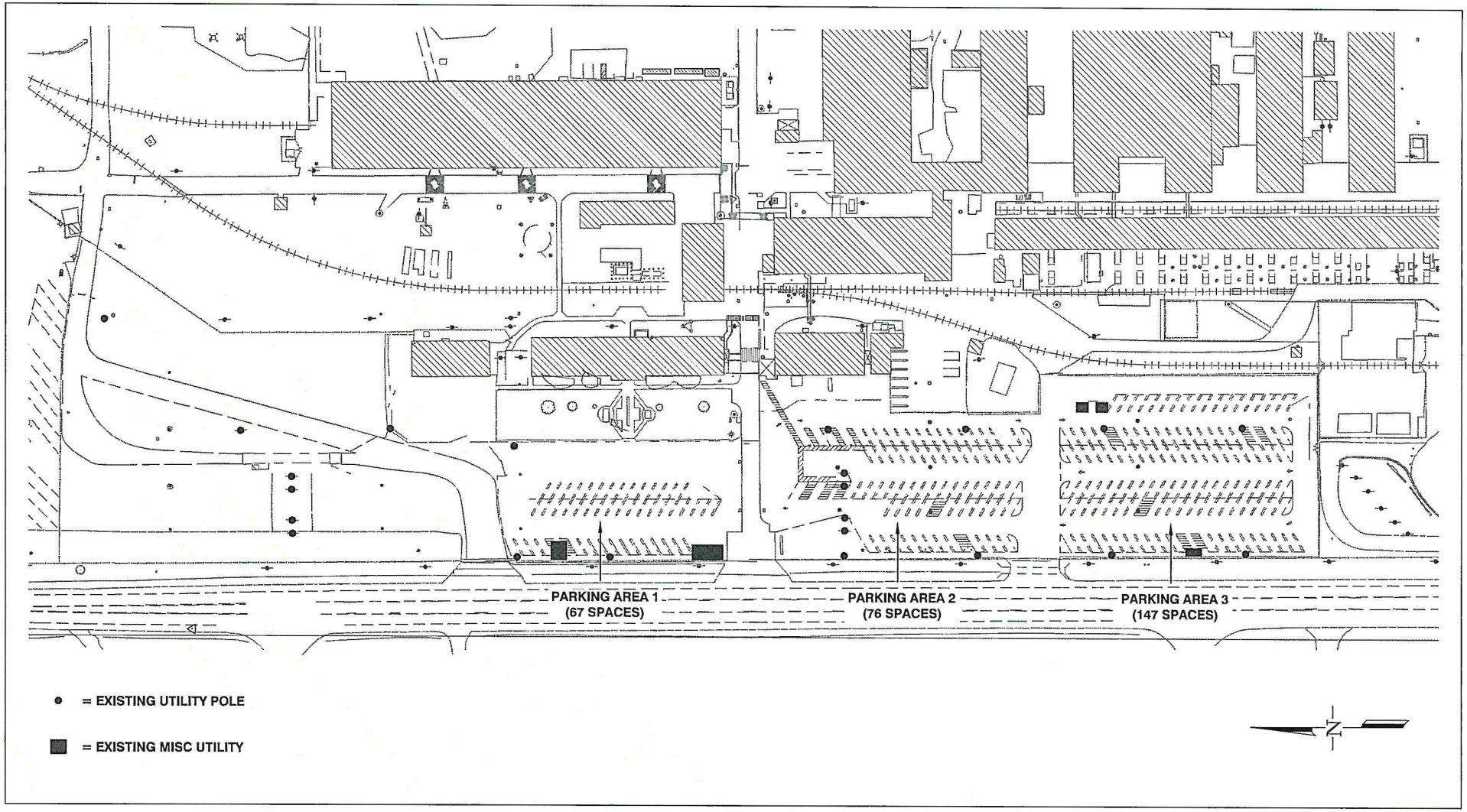
Riverbank Army Ammunition Plant

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November 2010
TruckScaleMemo\WC09-2656_1_ProjSiteVic

PROJECT SITE VICINITY MAP

FIGURE 1

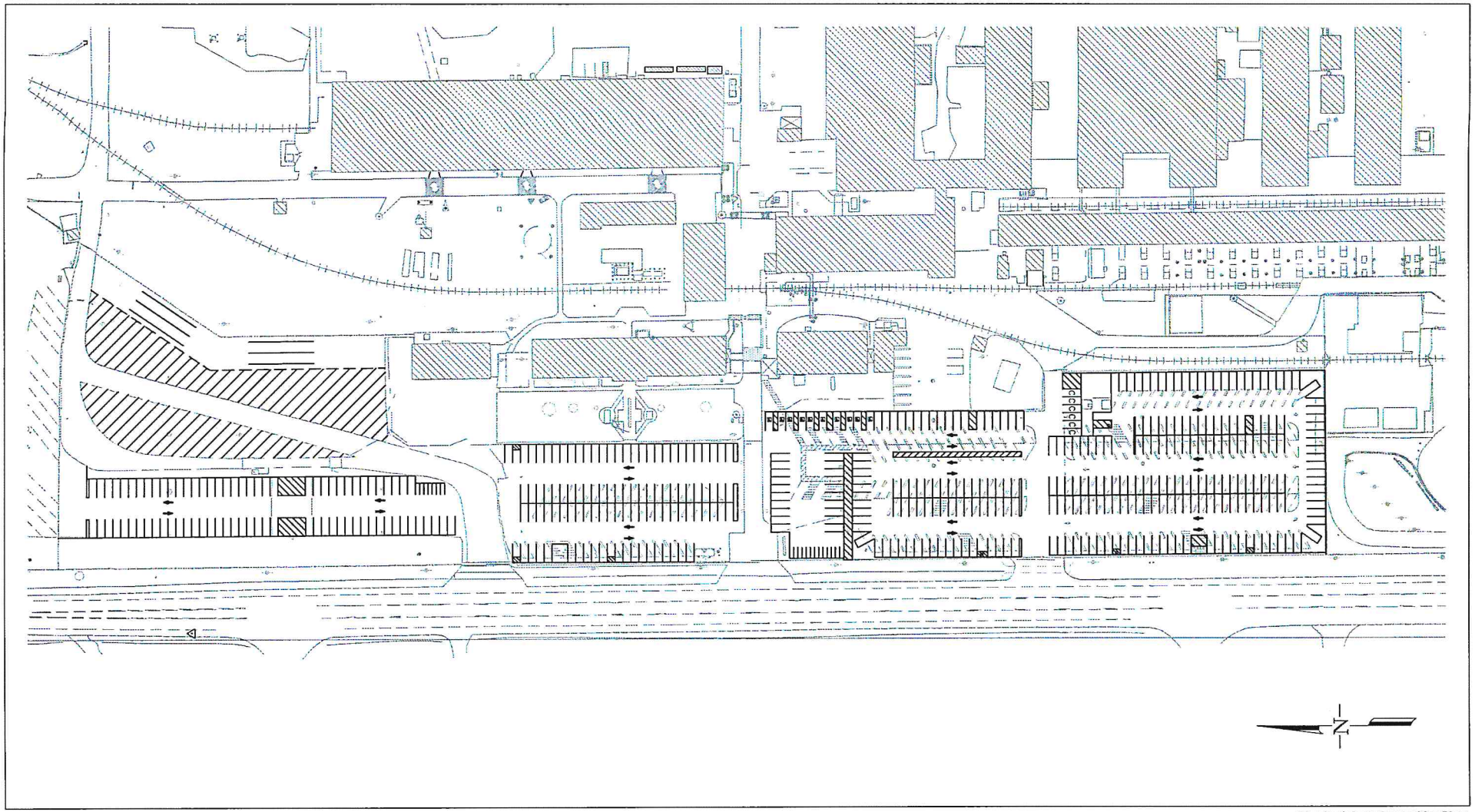


Riverbank Army Ammunition Plant

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Oct 22, 2010 FPA
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EXISTING PARKING AREAS
FIGURE 2



Riverbank Army Ammunition Plant

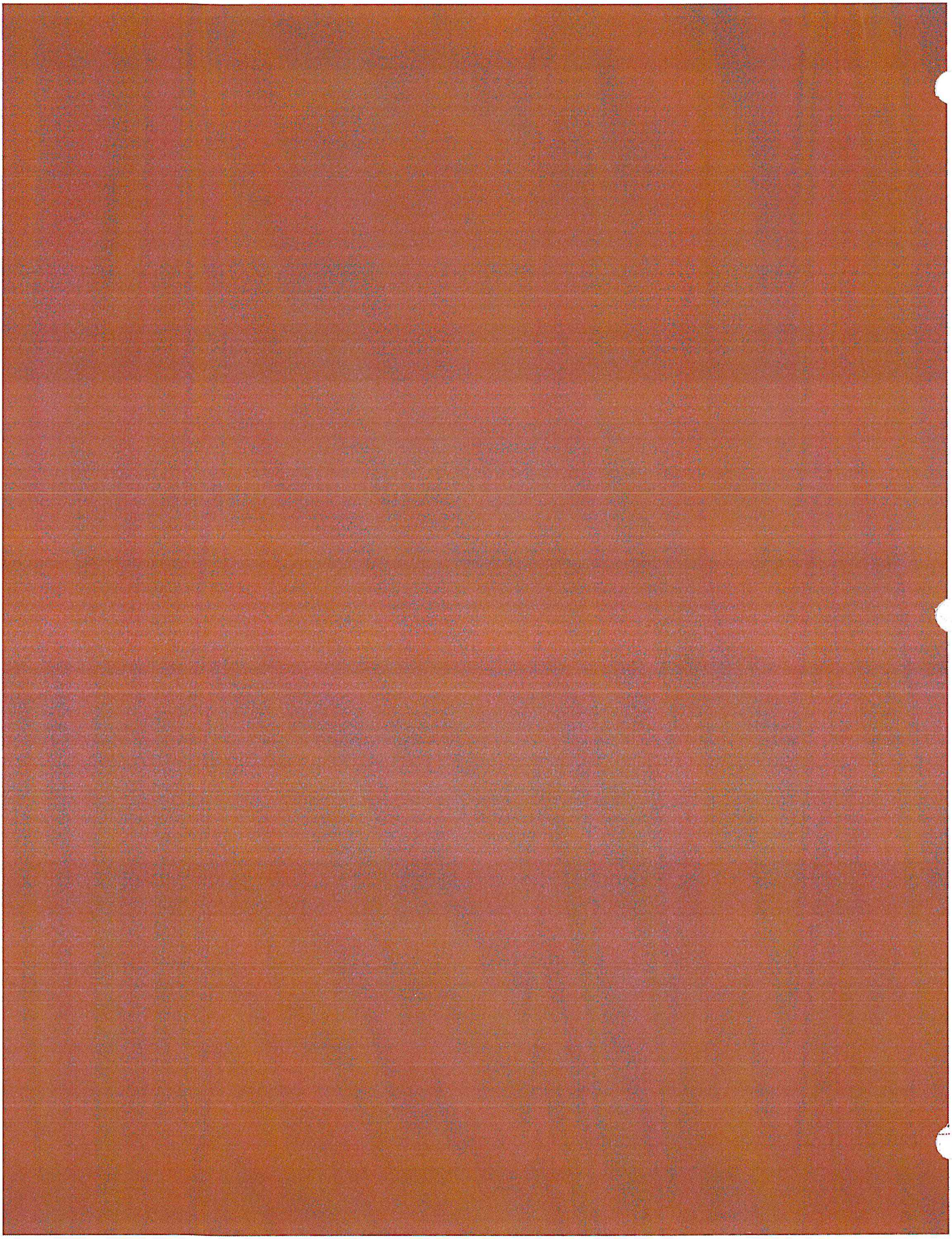
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CONCEPTUAL PARKING LOT RECONFIGURATION
FIGURE 3

APPENDIX F:

CITY APPROVED STREET TREES



CITY OF RIVERBANK LANDSCAPE STANDARDS

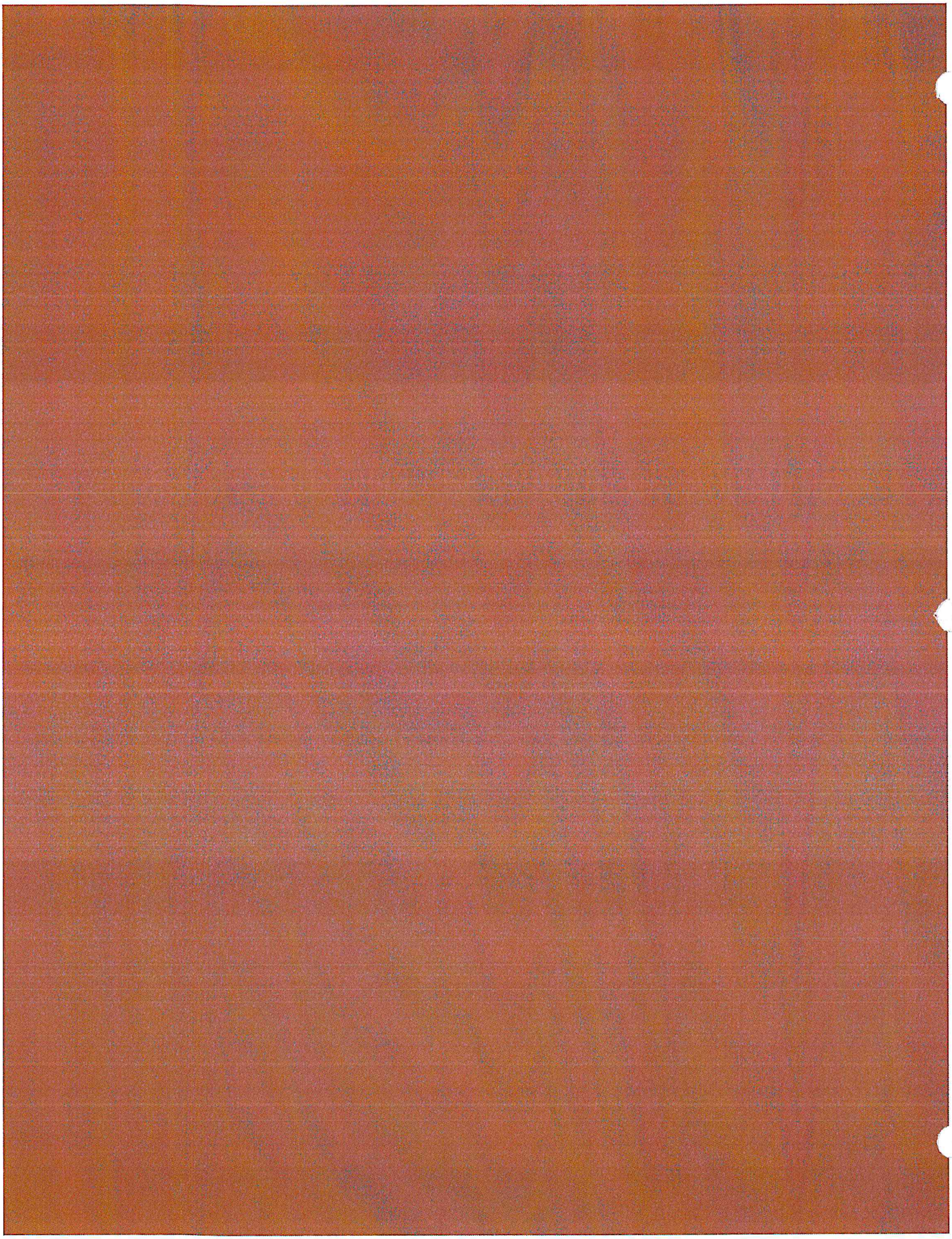
Approved Street Trees

TREE	LATIN	TYPE
Flowering Plum	*Prunus Blireana* *Prunus Atropurpuce* *Prunus Cistene*	Deciduous
Hawthorn	*Crataegus Lavellei* *Crataegus Phaenopyrum* *Crataegus Oxyacantha Paulii*	Deciduous
Sawleaf Zelkova	*Zelkova Serrata*	Deciduous
Red Horse Chestnut	*Aesculus Camea*	Deciduous
Holly Oak/Other Oaks	*Quercus Ilex*	Evergreen or Deciduous
Maidenhair	*Ginkgo Biloba*	Deciduous
Chinese Pistachio	*Pistacia Chinensis*	Deciduous
Goldenrain Tree	*Koelreuteria Paniculata*	Deciduous
Ash varieties (except Modesto)	*Fraxinus*	Deciduous
Fruitless Pear	*Pyrus Calleryana*	Deciduous

- At planting, minimum tree size shall be 15-gallon containers; minimum tree height shall be 7'0" from top of container to top of tree; caliper of tree shall be no smaller than ¾".
- Each interior lot will require one (1) tree; corner lots will require at least one (1) tree per street frontage (minimum of two trees total).
- The developer or contractor shall water trees at the time of planting and shall be responsible for the care of the trees until the house is occupied.

APPENDIX G:

MITIGATION MONITORING AND REPORTING PROGRAM



MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) for the RAAP Specific Plan reflects the analysis of impacts and mitigation measures included in the Environmental Impact Report.

The purpose of the MMRP is to ensure the implementation of mitigation measures identified as part of the environmental review for the Project. The MMRP includes the following information:

- A list of mitigation measures.
- The party responsible for implementing the mitigation measures.
- The implementation trigger or timing.
- The agency responsible for monitoring the implementation
- The procedure for implementation of the mitigation measure.
- The timing or frequency of monitoring activities.
- A record of compliance.

Public Resources Code sec. 21081.6(a) requires an agency to adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of Project approval. The City of Riverbank would adopt this MMRP, or an equally effective program, if it approves the proposed Project with the mitigation measures included in the Environmental Impact Report.

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SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
Air Quality						
AQ-1a: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1a through AQ-1d. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with construction period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	Project Applicant	Prior to issuance of building permit	City of Riverbank Development Services Department	SJVAPCD to review construction specifications materials and provide compliance verification to City to retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1b: SJVAPCD Regulation VIII Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the RAAP Specific Plan shall be required to implement the following controls: ♦ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover; ♦ All on-site unpaved roads and off-site unpaved ac-	Construction Contractors	During construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
cess roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant; ♦ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by pre-soaking; ♦ With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition; ♦ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained; ♦ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden)*; ♦ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant; ♦ Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and ♦ Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.						

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
AQ-1c: Enhanced Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the Specific Plan, the following measures shall be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements): ♦ Limit traffic speeds on unpaved roads to 15 mph; and ♦ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	Construction Contractors	During Construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1d: Additional Control Measures. The following control measures are strongly encouraged by the SJVAPCD at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions: ♦ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; ♦ Install wind breaks at windward side(s) of construction areas; ♦ Suspend excavation and grading activity when wind exceeds 20 mph *(Regardless of wind speed, and owner/operator must comply with Regulation VIII's 20 percent opacity limitation.)*; and ♦ Limit area subject to excavation, grading, and other construction activity at any one time.	Construction Contractors	During construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1e: The following measures may be implemented to mitigate emissions from construction equipment exhaust: ♦ Use of alternative-fueled or catalyst-equipped diesel construction equipment;	Construction Contractors	During construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
♦ Minimize idling time (e.g. 5-minute maximum); ♦ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; ♦ Replace fossil-fueled equipment with electrically-driven equivalents (provided they are not run via a portable generator set); ♦ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; and ♦ Implement activity management (e.g. rescheduling activities to reduce short-term impacts).				administrative record/ Conduct site inspections		Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-2: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g., improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of	Project Applicant	Prior to issuance of building permit	City of Riverbank Development Services Department	SJVAPCD to review construction specifications materials and provide compliance verification to City retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with operational period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Each individual project, including those projects allowed by right, that introduce significant sources of air pollutant emissions or stationary sources of TACs shall complete separate ambient air quality analysis and health risks assessments to ensure that violations of ambient air quality standards do not occur, including an analysis of cumulative emissions from the RAAP Specific Plan. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.						
Biological Resources						
BIO-1: Implementation of the Plan shall avoid disturbance to the maternity roosts of special-status bats during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than two weeks in advance of any demolition or construction activity involving concrete breaking or similarly noisy or intrusive activities, that would commence during the pup-rearing season (April 15 through August 31), or winter hibernacula season (October 15 through March 1, depending on weather conditions) a qualified bat biologist, acceptable to the CDFG, shall conduct pre-demolition surveys of all potential special-status bat breeding habitat in the vicinity of the planned activity. Depending on the	Construction Contractor	Prior to issuance of grading and construction permits	City of Riverbank Development Services Department	Site inspection	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats: 1. If active roosts are identified during pre-construction surveys, a no disturbance buffer will be created by the qualified bat biologist, in consultation with the CDFG, around active roosts during the breeding season. The size of the buffer will take into account factors such as the following: ♦ Noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction activity; ♦ Distance and amount of vegetation or other screening between the project site and the roost; and ♦ Sensitivity of individual nesting species and the behaviors of the bats. 2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required. 3. Pre-construction surveys are not required for demolition or construction activities scheduled to occur during the non-breeding and winter hibernacula season (September 1 through October 15, and March 1 through April 15). 4. Noisy demolition or construction activities as described above (or activities producing similar substantial increases in noise and activity levels in the vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking						

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees would be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above. 5. Bat roosts initiated during demolition or construction activities are presumed to be unaffected by the activity, and a buffer is not necessary. 6. Destruction of roosts of special-status bats and overt interference with roosting activities of special-status bats shall be prohibited. 7. The noise control procedures for maximum noise, equipment, and operations identified in Chapter 4.12, Noise, of this EIR shall be implemented. Implementation of the above mitigation measure would reduce potential impacts to the maximum extent practicable.						
Cultural Resources						
CUL-1: Prior to the demolition of buildings and structures comprising the eligible district, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation shall be conducted for the affected structures. HABS/HAER recordation could include archiving of original plans, undertaking archival research for preparation of a report, making measured drawings, and completing a photographic study of the structures.	Project Applicant	Prior to demolition of buildings and structures comprising the eligible district	City of Riverbank Development Services Department	Review HABS/HAER recordation	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

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SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
Greenhouse Gas Emissions						
GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate BPS will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	SJVAPCD to review project-level analyses and provide compliance verification to City to retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
Noise						
NOISE-1: In order to reduce noise generated by activities occurring within the RAAP site, the following mitigation measures shall be implemented: ♦ Project level acoustical analyses shall be constructed for noise-generating land uses proposed as part of the Specific Plan. Exterior noise levels at residential land uses interfacing active parks, commercial land uses, or industrial land uses shall be maintained in accordance with the standards presented in the General Plan and Municipal Code. ♦ Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and evening hours (7 a.m. to 10 p.m.). ♦ Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers.	Developers and Construction Contractors	Prior to construction and site plan approval	City of Riverbank Development Services Department	Review project level acoustic analyses and retain for administrative record/ Site inspection	Review analyses once per individual development project/ Conduct site inspection at least once at beginning of operation	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

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SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
♦ Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).						
NOISE-2: Noise reduction methods shall be implemented to reduce generated by activities resulting from the Specific Plan. These measures shall include, but are not limited to the following: ♦ Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors. ♦ New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. ♦ Sound insulation treatments to affected buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces. ♦ Installing traffic calming measures to slow traffic along Claus Road could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.	Project Applicant	Prior to construction and site plan approval	City of Riverbank Development Services Department	Consider measures to include in construction and site plans	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
NOISE-3: To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the plan area: ♦ Limit construction to the hours of 7:00 a.m. to 6:30 p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays. ♦ Equip all internal combustion engine-driven	Construction Contractors	Prior to construction	City of Riverbank Development Services Department	Review construction plans and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
equipment with mufflers which are in good condition and appropriate for the equipment. ♦ Unnecessary idling of internal combustion engines should be strictly prohibited. ♦ Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA. ♦ Utilize "quiet" air compressors and other stationary noise sources where technology exists. ♦ Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible. ♦ Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site. ♦ The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities. ♦ Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance						Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.						
NOISE-4: Implement Mitigation Measure NOISE-2.	Project Applicant	Prior to construction and site plan approval	City of Riverbank Development Services Department	Consider measures to include in construction and site plans	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
Public Services						
PUB-1: The City shall coordinate with Stanislaus Consolidated Fire Protection District to ensure fair share development fees for future development resulting from the implementation of the RAAP Specific Plan to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate.	City of Riverbank	Prior to issuance of building permits	City of Riverbank Development Services Department and Stanislaus Consolidated Fire Protection District	Review the RAAP Specific Plan	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
Transportation and Traffic						
TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of	Project Applicant	Prior to issuance of building	City of Riverbank Development	Obtain proof of payment	Once per individual	Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Coffee Road intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service at the Claribel Road/Coffee Road intersection level to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stanislaus County plans to signalize this intersection as part of the Claribel Road widening project. Funding for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.		permits	Services Department	and retain for administrative record	development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Roselle Avenue intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Roselle Avenue intersection to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	Obtain proof of payment and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-3: Future developers within the RAAP area shall contribute their fair share towards improvements to provide adequate turning radii in conformance with STAA requirements at intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road, though the payment of local and regional traffic fees. No other improvements	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	Obtain proof of payment and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
are needed to mitigate project impacts at these intersections.						Date:_____ Initials:_____ Date:_____
TRANS-4: Although construction impacts are expected to be temporary and less-than-significant, for all future development in the plan area, the following is recommended to minimize the effects of construction related activity: ♦ Prepare a construction management plan, including: • Project staging plan to maximize on-site storage of materials and equipment. • A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes. • Permitted construction hours. • Location of construction staging. • Provision of on-site parking for all construction employees, site visitors, and inspectors. • Provisions for street sweeping to remove construction related debris on public streets.	Project Applicant	Prior to construction	City of Riverbank Development Services Department	Review construction management plan and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-5: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS C would be achieved. Alternatively, intersection improvements beyond the cross-section identified in the General Plan could be provided to improve peak hour operations,	County of Stanislaus	Implementation of North County Corridor Project	City of Riverbank	Continue monitoring of conditions following completion of North County Corridor Project	Following completion of North County Corridor Project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____

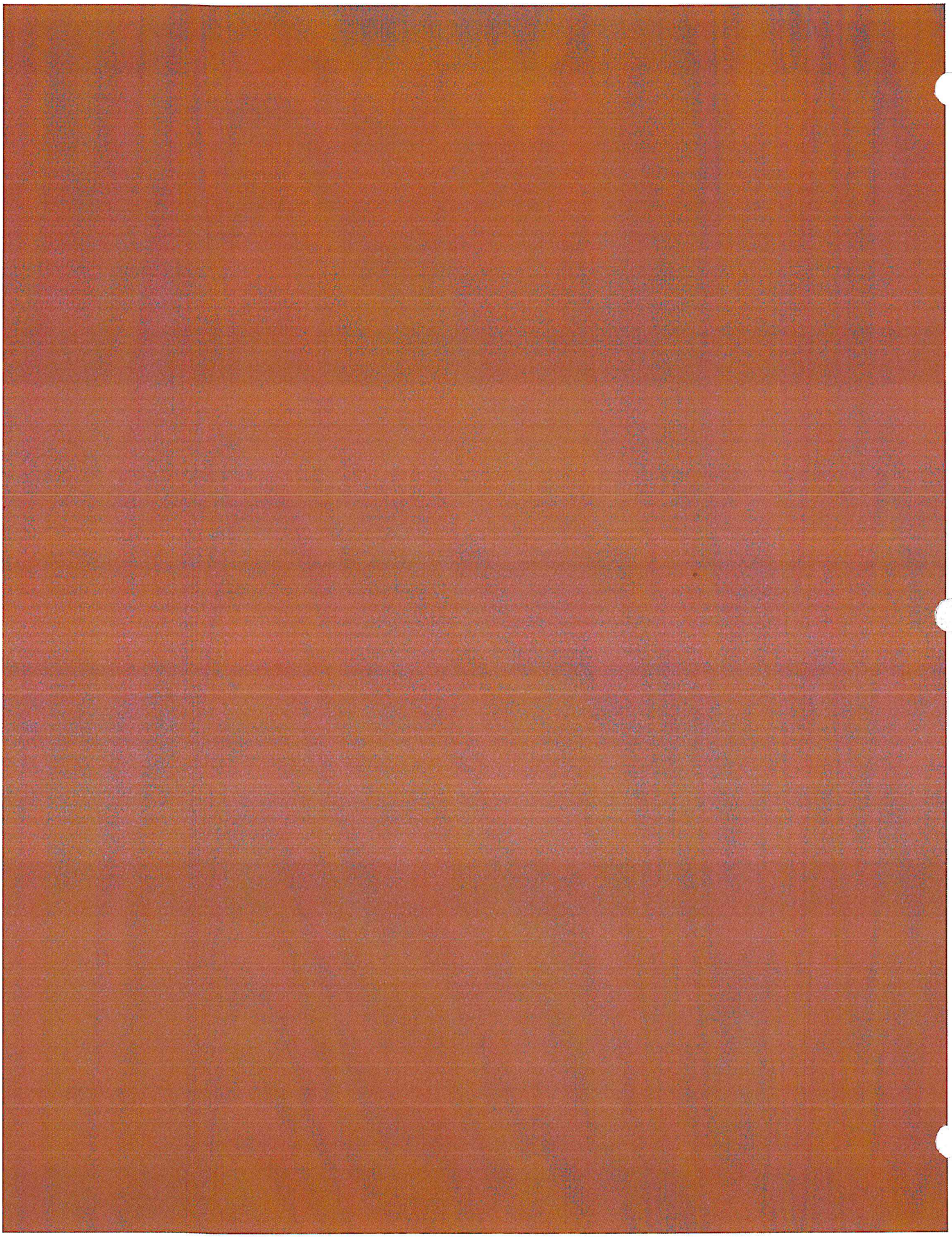
SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

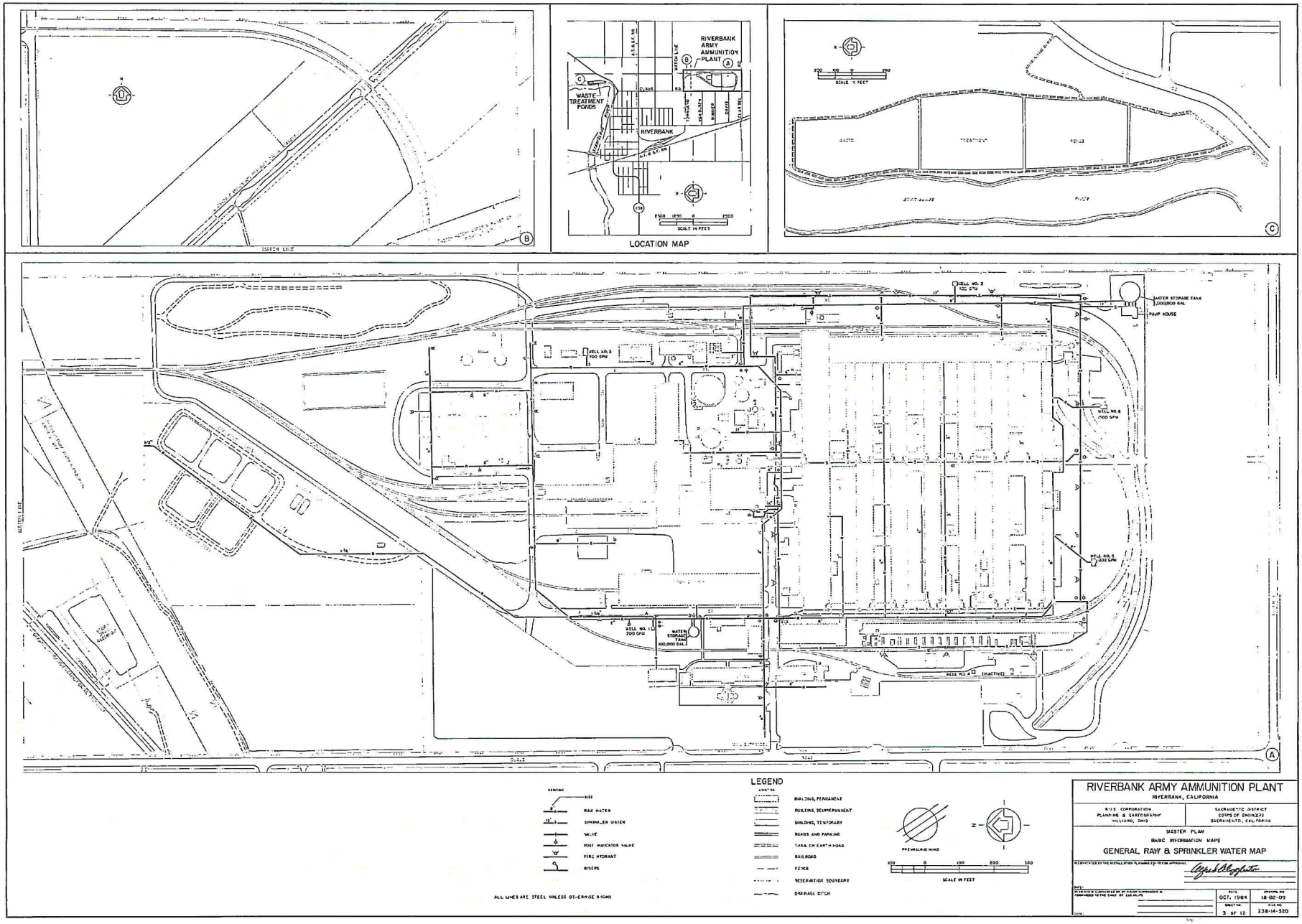
Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
such as dual left-turn lanes and right-turn only lanes on all approaches. This improvement would improve the service level to LOS E during the AM peak hour and LOS D during the PM peak hour, as shown on Table 4.16-10. These service levels are considered deficient for this intersection. Given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.						Date:_____ Initials:_____ Date:_____
TRANS-6: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS D would be achieved. Alternatively, construction of additional improvements at this intersection that would result in acceptable service levels, including dual left-turn pockets on the northbound, westbound, and eastbound approaches could be constructed. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown in Table 10 of the TIA, reducing this impact to a less-than-significant level. However, given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	County of Stanislaus	Implementation of North County Corridor Project	City of Riverbank	Continue monitoring of conditions following completion of North County Corridor Project	Following completion of North County Corridor Project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

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APPENDIX H:

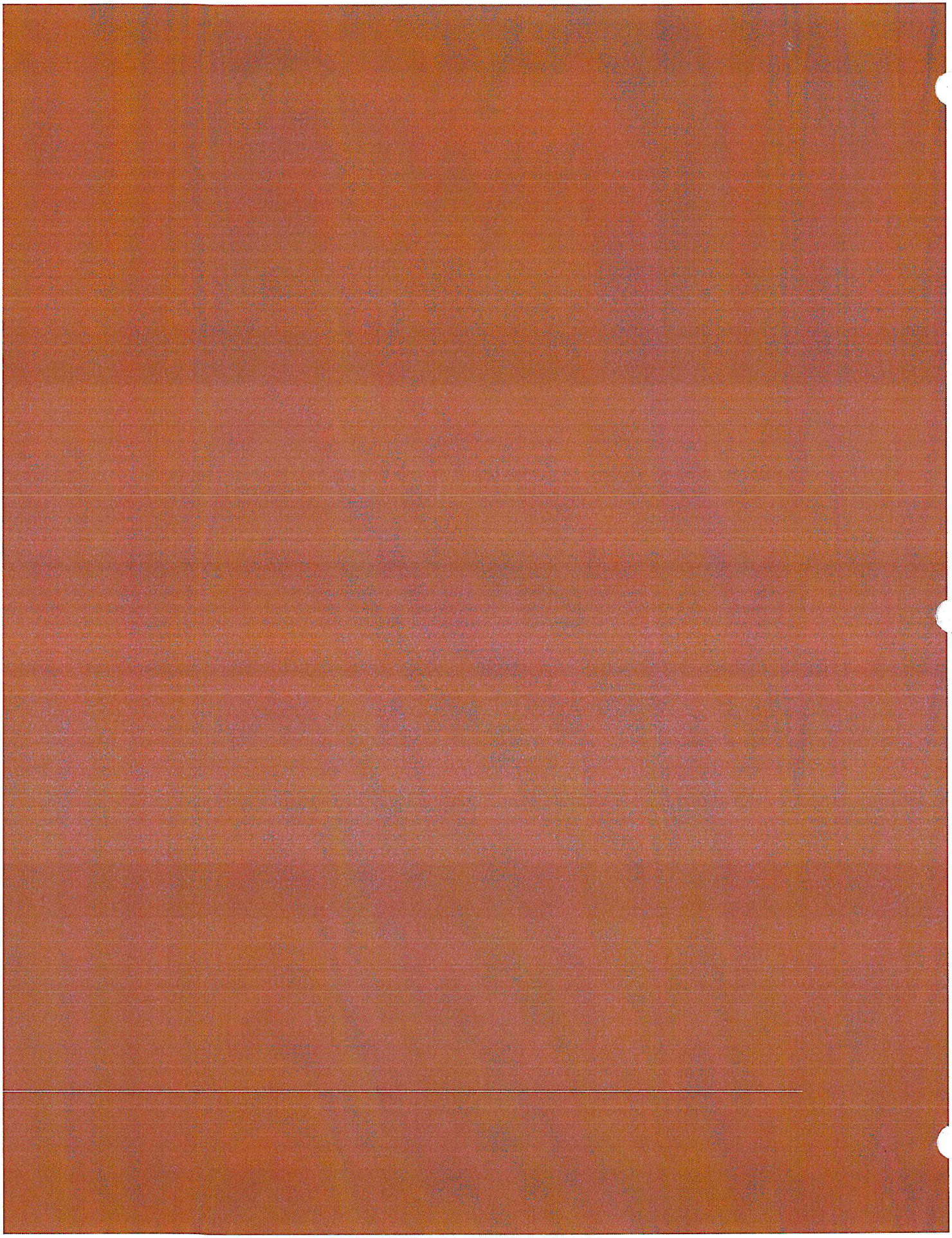
GENERAL RAW & SPRINKLER WATER MAP

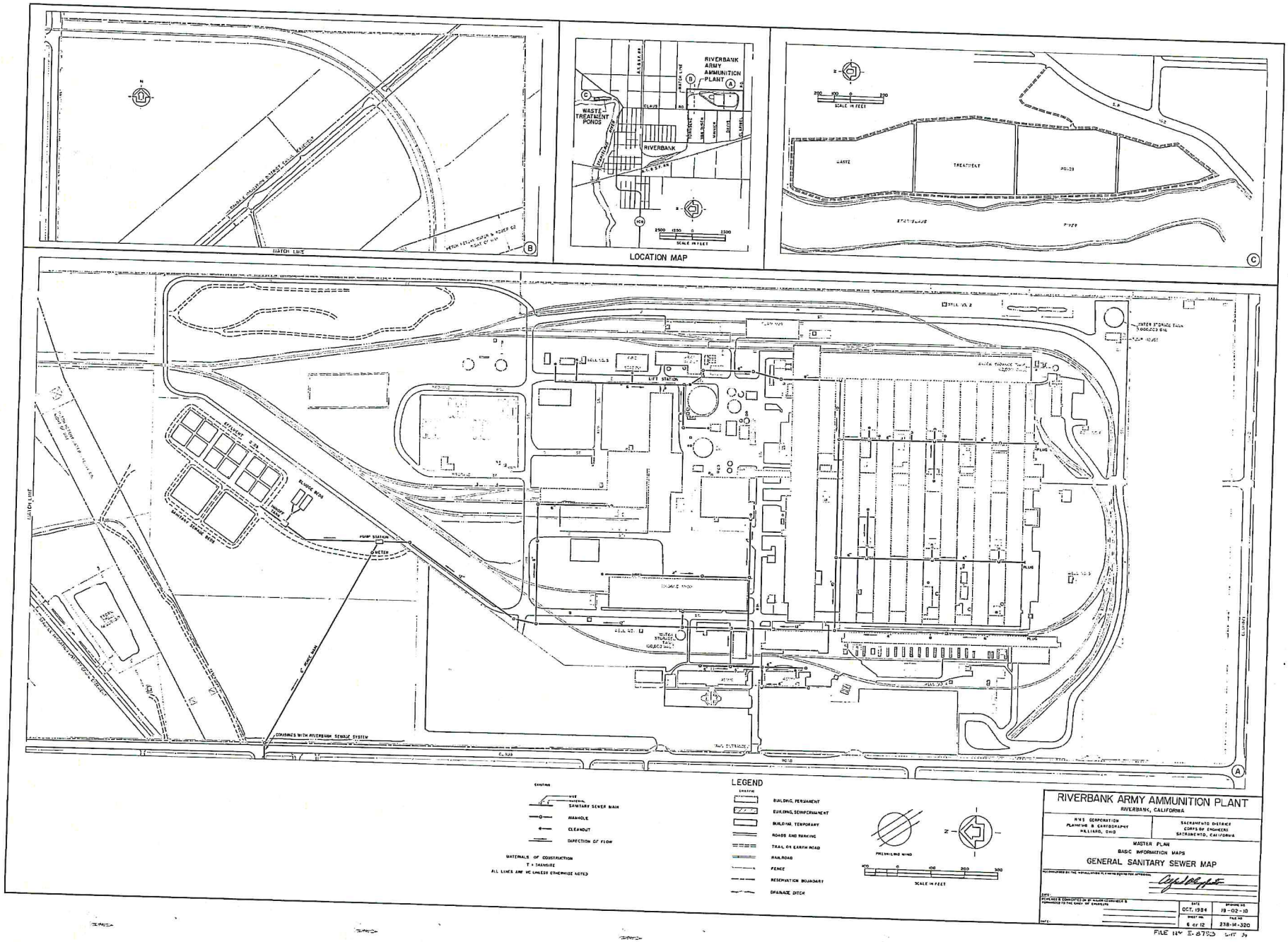



RIVERBANK ARMY AMMUNITION PLANT
WASTE TREATMENT PONDS
RIVERBANK
LOCATION MAP
WELL NO. 2 700 GPM
WATER STORAGE TANK 1,000,000 GAL.
PUMP HOUSE
WELL NO. 3 700 GPM
WELL NO. 6 700 GPM
WELL NO. 5 1000 GPM
WELL NO. 1 700 GPM
WATER STORAGE TANK 100,000 GAL.
WELL NO. 4 (inactive)
LEGEND
RAW WATER
SPRINKLER WATER
VALVE
POST INDICATOR VALVE
FIRE HYDRANT
RISERS
BUILDING, PERMANENT
BUILDING, SEMIPERMANENT
BUILDING, TEMPORARY
ROADS AND PARKING
TRAIL OR EARTH ROAD
RAILROAD
FENCE
RESERVATION BOUNDARY
DRAINAGE DITCH
PREVAILING WIND
SCALE IN FEET
ALL LINES ARE STEEL UNLESS OTHERWISE SHOWN
RIVERBANK ARMY AMMUNITION PLANT
RIVERBANK, CALIFORNIA
MASTER PLAN
BASIC INFORMATION MAPS
GENERAL RAW & SPRINKLER WATER MAP
OCT. 1984
18-02-09
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238-14-320

APPENDIX I:

GENERAL SANITARY SEWER MAP




RIVERBANK ARMY AMMUNITION PLANT
WASTE TREATMENT PONDS
RIVERBANK
LOCATION MAP
LEGEND
BUILDING, PERMANENT
BUILDING, SEMIPERMANENT
BUILDING, TEMPORARY
ROADS AND PARKING
TRAIL OR EARTH ROAD
RAILROAD
FENCE
RESERVATION BOUNDARY
DRAINAGE DITCH
SANITARY SEWER MAIN
MANHOLE
CLEANOUT
DIRECTION OF FLOW
MATERIALS OF CONSTRUCTION
T = TAKEOVER
ALL LINES ARE VC UNLESS OTHERWISE NOTED
PREVAILING WIND
SCALE IN FEET
RIVERBANK ARMY AMMUNITION PLANT
RIVERBANK, CALIFORNIA
RMS CORPORATION
PLANNING & CARTOGRAPHY
HILLIARD, OHIO
SACRAMENTO DISTRICT
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA
MASTER PLAN
BASIC INFORMATION MAPS
GENERAL SANITARY SEWER MAP
OCT. 1984
6 of 12
238-M-320

CITY OF RIVERBANK

RESOLUTION NO. 2014-006

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIVERBANK CERTIFYING AN ENVIRONMENTAL IMPACT REPORT (STATE CLEARINGHOUSE #2011022015), ADOPTION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS, AND MITIGATION MONITORING AND REPORTING PROGRAM FOR THE RIVERBANK ARMY AMMUNITION PLANT SPECIFIC PLAN AND GENERAL PLAN AMENDMENT

WHEREAS, the Riverbank Army Ammunition Plant was placed on a list of military installations recommended for closure as part of the BRAC 2005 round of closures; and

WHEREAS, the Riverbank City Council, as the recognized and designated Local Redevelopment Authority for Riverbank Army Ammunition Base, has submitted a Reuse Plan for the redevelopment of the Riverbank Army Ammunition Plant as required under BRAC law and regulation; and

WHEREAS, the Local Redevelopment Authority now wishes to oversee the fulfillment of the vision, goals and objectives as stated by the community and presented in the Reuse Plan; and

WHEREAS, the Local Redevelopment Authority has determined that the best way to accomplish this is to develop and adopt a Specific Plan pursuant to Section 65450 et. seq. of the State of California Government Code to guide the redevelopment of the property and has caused such to be prepared; and

WHEREAS, this General Plan designates the Riverbank Army Ammunition Plant property largely as "Industrial/Business Park" with the northeast corner being designated "Medium Density Residential"; and

WHEREAS, the approved Reuse Plan designates the entire site as Industrial/ Business Park with two areas of approximately 3 acres and 4 acres as Community Commercial necessitating a General Plan amendment; and

WHEREAS, the use of the site as an Army Base for more than 60 years and the proposed reuse of the site indicates that there may be significant impacts on the environment and, therefore, a Program Level Environmental Impact Report (EIR) needs to be prepared analyzing the draft Specific Plan and Proposed General Plan Amendment (collectively, the "Project"); and

WHEREAS, a Notice of Preparation that an EIR was prepared and released to obtain public and agency review and comment on the Project on February 2, 2011, with a public review period ending on March 7, 2011; and

WHEREAS, a draft Environmental Impact Report (DEIR) on the Specific Plan and General Plan Amendment has been prepared and circulated for comment; and

WHEREAS, copies of the DEIR and Specific Plan were distributed to public agencies which have jurisdiction by law with respect to the Project, the State Clearinghouse, and other interested persons and agencies on March 29, 2013 and provided more than the required 45 day comment period with comments due on May 20, 2013; and

WHEREAS, written responses were prepared to all comments received during the comment period and these responses are included in a separate volume entitled *City of Riverbank, Riverbank Army Ammunition Plant Specific Plan EIR, State Clearinghouse Number 2011022015, August 2013/Final EIR* (the "Final EIR" or "FEIR"). The Final EIR consists of: a List of Agencies and Persons Commenting, Comments and Responses to those Comments, and the DEIR; and

WHEREAS, pursuant to Public Resources Code Section 21092.5, the City provided written responses to comments on the DEIR received by all public agencies to such public agencies on November 14, 2013, which responses conformed to the requirements of CEQA; and

WHEREAS, the Planning Commission held a duly advertised Public Hearing on December 17, 2013 to consider the adoption of the FEIR, including CEQA Findings, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Plan and, following that public hearing and review of these reports, adopted Resolution No. 2013-010 recommending that the City Council certify the FEIR and adopt the CEQA Findings, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Plan; and

WHEREAS, notice of the City Council public hearing on the Final Environmental Impact Report was published in the *Riverbank News*, a newspaper of general circulation, on January 29, 2014; and

WHEREAS, notices of the City Council public hearing on the Final Environmental Impact Report were mailed to all property owners within 300 feet of the property, according to the most recent assessor's roll, on January 24, 2014; and

WHEREAS, the City Council held a duly advertised Public Hearing on February 10, 2014 to consider the adoption of the FEIR, including CEQA Findings, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Plan; and

WHEREAS, the City Council has received and reviewed the Final EIR for the Project, along with the Specific Plan, CEQA Findings, Statement of Overriding Considerations and Mitigation Monitoring and Reporting Plan; and

WHEREAS, the FEIR identifies certain significant and potentially significant adverse effects on the environment caused by the Project; and

WHEREAS, the City is required, whenever possible, pursuant to CEQA to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant environmental effects of the Project; and

WHEREAS, the City Council desires that, in accordance with CEQA, they declare that, despite the occurrence of significant environmental effects that cannot be substantially lessened or avoided through the adoption of feasible mitigation measures or feasible alternatives, there exist certain overriding economic, social and other considerations that support approval of the Project.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Riverbank finds, determines, and resolves as follows:

1. That the City Council finds that the above Recitals are true and correct and by this reference makes them a part hereof.

2. That the City Council hereby finds that the FEIR has been completed in compliance with CEQA.

3. That the City Council hereby finds that the FEIR has been presented to the City Council, which reviewed and considered the information and analysis contained therein before making the findings attached hereto and adopting the mitigation monitoring and reporting program as attached and adopting the statement of overriding considerations. The findings and statement of overriding considerations are contained in **Exhibit A**, attached hereto.

4. That, to the extent that these findings conclude that various proposed mitigation measures outlined in the FEIR are feasible and have not been modified, superseded or withdrawn, the City Council as lead agency, shall ensure implementation of these measures. These findings are not merely informational but constitute a binding set of obligations that will come into effect when the City Council issues the Project entitlements. The actual implementation of the mitigation measures so adopted shall occur by having them included as conditions of approval on subsequent discretionary entitlements granted with the Project Area.

5. That, as set forth in its findings of fact, the City Council finds that none of the proposed project alternatives set forth in the FEIR can feasibly substantially lessen or avoid those significant adverse environmental

effects not otherwise lessened or avoided by the adoption of all feasible mitigation measures while still meeting the Project's objectives.

6. That in order to comply with Public Resources Code Section 21080.6 the City Council hereby adopts the mitigation monitoring and reporting program as set forth in the attached **Exhibit B**. The program is designed to ensure that, during project implementation, the City, [affected landowners, their assigns and successors in interest,] and any other responsible parties comply with the feasible mitigation measures identified below. The mitigation, monitoring and reporting program identifies, for each mitigation measure, the responsible party for implementation.

7. That, since the adoption of all feasible mitigation measures will not mitigate or avoid all significant adverse environmental effects caused by approval of the Project, the City Council, pursuant to CEQA Guidelines Section 15093, and attached hereto, issues a statement of overriding considerations, as set forth in **Exhibit A**.

8. That the FEIR set forth environmental impacts that would be significant or potentially significant in the absence of mitigation measures. As to each such impact, the City Council finds that changes or alterations have been incorporated into the project to mitigate or avoid the significant or potentially significant environmental impacts. Also set forth are impacts that are significant and unavoidable that cannot be mitigated or avoided through the adoption of feasible mitigation measures or feasible alternatives. As to these impacts, the City Council finds that there are certain overriding economic, social and other considerations for approving the Project.

9. That the City Council finds that the Project is consistent with the City of Riverbank General Plan, as amended, and implements the goals and policies of the General Plan.

10. Based on the findings set forth in this Resolution and the evidence in the City Staff Report, the City Council certifies the FEIR, makes findings concerning the mitigation measures, adopts the mitigation monitoring and reporting program, makes findings concerning alternatives and adopts a statement of overriding consideration in accordance with CEQA for the Project.

11. Constitutionality, severability. If any section, subsection, sentence, clause, phrase, or word of this resolution is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of the resolution. The City Council of the City of Riverbank recommends that the City Council declare that it would have passed this resolution and each

section, subsection, sentence, clause, phrase, and word thereof, irrespective of the fact that any one or more section(s), subsection(s), sentences(s), clause(s), phrase(s), or words(s) be declared invalid.

PASSED AND ADOPTED by the City Council of the City of Riverbank at a regular meeting held on the 10th day of February, 2014; motioned by Councilmember Leanne Jones Cruz, seconded by Councilmember Darlene Barber-Martinez, and upon roll call was carried by the following City Council vote of 5-0:

AYES: **Barber-Martinez, Jones Cruz, Tucker, Campbell, and Mayor O'Brien**
NAYS: **None**
ABSENT: **None**
ABSTAINED: **None**

ATTEST:

Annabelle H. Aguilar, CMC
City Clerk

APPROVED:

Richard D. O'Brien
Mayor

Attachments: Exhibit A – CEQA Findings of Fact and Statement of Overriding Considerations
Exhibit B – Mitigation Monitoring and Reporting Program

Exhibit A

THE CITY OF RIVERBANK FINDINGS REQUIRED UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT
(Public Resources Code, Section 21000 et seq)

I. Introduction

The Project consists of adoption and implementation of the Riverbank Army Ammunition Plan ("RAAP") Specific Plan ("Specific Plan"). The Specific Plan covers an approximately 146-acre area in the southeast portion of the City of Riverbank ("City"). The City RAAP prepared a Final Environmental Impact Report ("Final EIR") for the RAAP and other related entitlements including a General Plan Amendment, the Specific Plan, and Zoning Map ("RAAP Specific Plan" or the "Project"). The Riverbank Local Redevelopment Authority is the lead agency for the Project.

The Final EIR addresses the potential environmental effects associated with the development or the redevelopment, reuse, and expansion of the former Riverbank Army Ammunition Plant into a commercial/industrial development. This review is at a programmatic level; therefore, as subsequent development occurs, project-level environmental review will still be required but may be streamlined by reference to the analysis already performed under the Final EIR. (See *Public Resources Code section 21094.)*. The Project site includes approximately 146 acres of land in the southeast portion of the city of Riverbank near the intersection of Claus Road and Claribel Road. The Project includes, among other uses, commercial and industrial uses, including green technology and the redevelopment and reuse of existing structures.

The Findings, recommendations, and statement of overriding considerations set forth below ("Findings") are made and recommended by the **City of Riverbank Planning Commission** (the "Commission"), for adoption by the City Council, as the City's findings under the California Environmental Quality Act ("CEQA") (Pub. Resources Code, §21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., title 14, § 15000 et seq.) relating to the Project. The Findings provide the written analysis and conclusions of this Commission regarding the Project's environmental impacts, mitigation measures, alternatives to the Project, and the overriding considerations, which in this Commission's view, support approval of the RAAP Specific Plan.

II. General Findings and Overview

A. Relationship to the City of Riverbank General Plan

The Riverbank General Plan was adopted in 2009. The General Plan anticipated the transfer of this property to the City but lacked any specifics about the level of development that might be expected. The Specific Plan helps to implement the General Plan and increases the level of specificity with regard to the RAAP.

B. Procedural Background

The Draft Environmental Impact Report (referred to as, the "Draft EIR" or the "DRAFT EIR") was circulated for public review and comment on March 28, 2013, and was filed with the State Office of Planning & Research under State Clearinghouse No.

2011022015. The Draft EIR was made available for review and comment by interested persons and public agencies through May 20, 2013.

The City prepared written responses to the comments received during the comment period and included these responses in a separate volume entitled "Riverbank Army Ammunition Plant Specific Plan EIR, Final EIR". The Final EIR consists of: Introduction, List of Agencies and Persons Commenting, and Comments and Responses. The Final EIR was made available for public review on March 28, 2013.

On July 22, 2013, the City Council of the City of Riverbank adopted its Resolution No. 068, certifying the Urban Water Management Plan. As required by California law, the information contained in the Urban Water Management Plan was utilized in the preparation of the Draft EIR. (See "Utilities and Service Systems", pp. 4.17-13 to 4.17-15, 4.17-17, 4.17-22 to 4.17-23.) While the final action approving the Urban Water Management Plan, occurred after the distribution of the Draft EIR, the information contained in the Draft EIR is unchanged. Therefore, recirculation of the Draft EIR following approval of the Urban Water Management Plan is not required because no new information or change in impacts or mitigation measures occurred following the public comment period on the Draft EIR. (Public Resources Code section xx.)

C. Description of the Prior Environmental Impact Reports

In 2009, an EIR was certified for a revised City-wide General Plan. This EIR looked at the potential impacts associated with this transfer but on a broader basis than the current Draft and Final EIR (collectively "Final EIR") on the Specific Plan. As a result, the subsequent Final EIR has been completed on the Specific Plan.

D. Record of Proceedings and Custodian of Record

For purposes of CEQA and the findings set forth herein, the record of proceedings for the City of Riverbank's findings and determinations include the following documents and testimony, at a minimum:

- The Notice of Preparation and other public notices issued by the City in conjunction with the RAAP Specific Plan Project and the Draft EIR.
- All written and oral comments submitted by agencies or members of the public during the public review period for the Draft EIR (March 28, 2013 through May 20, 2013) and any public hearings or meeting held on Project approvals.
- All other public reports, documents, studies, memoranda, maps, or other planning documents related to the RAAP Specific Plan Project or the Final EIR and the Draft EIR, prepared by the City, consultants to the City, or responsible or trustee agencies with respect to the City's compliance with the requirements of CEQA and the Project Entitlements.
- The City of Riverbank General Plan, as amended, and all environmental review documents, findings and statements of overriding considerations made pursuant to Section 21081 of the Public Resources Code related thereto;

- All matters of common knowledge to this Commission, including, but not limited to (1) the Riverbank General Plan and other applicable policies, (2) the Riverbank Zoning Ordinance and other applicable ordinances, (3) information regarding the City's fiscal status, (4) applicable City policies and regulations, (5) reports, projections, and documentation regarding development within and surrounding the City, and (6) federal, state, and county laws, regulations, guidelines, and publications.
- All public reports, documents, studies, memoranda, maps, or other documents related to the SB 610 Water Supply Assessment, including, but not limited to Resolution No. 068, of the City Council of the City of Riverbank adopted on July 22, 2013.

The documents described above comprising the record of proceedings are located in the offices of the Riverbank Local Redevelopment Authority, 5300 Claus Road, Riverbank, CA 95367. The custodian of these documents is Debbie Olson, the Executive Director of the RLRA, or her designee.

E. Consideration of the Environmental Impact Report

In recommending adoption of these Findings, this Planning Commission finds that the Final EIR was presented to this Commission, which reviewed and considered the information in the Final EIR prior to recommending approval of the RAAP Specific Plan, General Plan amendment, and Rezoning Map. By these findings, this Commission ratifies, adopts and incorporates the analysis, explanation, findings, responses to comments and conclusions of the Final EIR. The Final EIR represents the independent judgment of the City.

CEQA Requirements

Public Resources Code section 21002 provides that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. The required procedures are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. In the event that specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof. (Public Resources Code §21002.)

The requirements set forth in Public Resources Code section 21002 are implemented, in part, through the requirement that agencies must adopt findings before approving projects for which EIRs are required. (See Pub. Resources Code § 21081, subd. (a); CEQA Guidelines, § 15091, subd. (a).)

The EIR included a detailed analysis of impacts in multiple environmental disciplines, analyzing the proposed project and alternatives, including a No Project Alternative. The EIR discloses the environmental impacts expected to result from the construction and operation of the proposed project. Where possible, mitigation measures were identified to avoid or minimize significant environmental effects. The mitigation measures identified in the EIR are measures proposed by the lead agency, and other

measures proposed by the lead agency or responsible or trustee agencies or other persons that were not included in the proposed project but could reasonably be expected to reduce adverse impacts if required as conditions of approving the proposed project, as required by CEQA Guidelines section 15126.4(a)(1)(A). Public Resources Code section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors." CEQA Guidelines section 15364 adds another factor: "legal" considerations. (See also *Citizens of Goleta Valley v. City Council "Goleta II"*) (1990) 52 Cal.3d 553, 565.)

The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417.) "'[F]easibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors." (Id.; see also *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 715.) Alternatives and mitigation measures may also be determined to be infeasible if they do not "fully satisfy the objectives associated with a proposed project" or are "undesirable from a policy standpoint." (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957.)

With respect to a project for which significant impacts are not avoided or substantially lessened, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project's "benefits" rendered "acceptable" its "unavoidable adverse environmental effects." (CEQA Guidelines, §§ 15093, 15043, subd. (b); see also Pub. Resources Code, § 21081, subd. (b).)

Pursuant to Public Resources Code section21081 and CEQA Guidelines section15091, no public agency shall approve or carry out a project for which a FEIR has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless the public agency makes one or more of the following findings with respect to each significant impact:

1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
3. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

The City has made one or more of these specific written findings regarding each significant impact associated with the proposed project. These findings set forth the evidentiary and policy basis for the City Council's decision to approve the proposed

project in a manner consistent with the requirements of CEQA. Those findings are presented below in **Table 1**, along with a presentation of facts in support of the findings.

F. Severability

If any term, provision, or portion of these Findings or the application of these Findings to a particular situation is held by a court to be invalid, void or unenforceable, the remaining provisions of these Findings, or their application to other actions related to the RAAP Specific Plan, shall continue in full force and effect unless amended or modified by the City.

III. Findings and Recommendations Regarding Significant and Unavoidable Impacts

A. Air Quality

1. Construction (EIR Impact AQ-1)

(a) Potential Impact: The potential impact of the Project on air quality due to construction-related operations is discussed at page 4.3-37 to 4.3-40 of the Draft EIR.

(b) Mitigation Measures: The following mitigation measures are hereby adopted and will be implemented by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measures AQ-1a to AQ-1e, inclusive

(c) Findings: Based on the Draft EIR and the entire record before this City, the City finds that:

(1) Effects of Mitigation: The potential impact of the Project on air quality can be reduced by the mitigation measures AQ-1a to AQ-1e because these measures ensure that the applicant employ best management practices to reduce or eliminate the potential introduction of criteria pollutants to an area of existing non-attainment. However, the impacts remain significant and unavoidable because the size of the project and the uncertainty of its construction schedule cannot fully preclude the possibility of air pollution during construction activities.

(2) Remaining Impacts: Although the RLRA will use its best efforts to avoid the introduction of pollutants, the size of the project and the uncertainty of the timing and completion of construction will result in construction period emissions that may violate clean air standards. The City finds that although changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this impact,

specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) Overriding Considerations: Economic, social and other benefits of the Project override any remaining significant adverse impact of the Project on air quality during construction, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

2. **Operations (EIR Impact AQ-2).**

a) **Potential Impact**. The proposed project could result in the emission of levels of criteria pollutants that may contribute to existing or projected air quality violations. This impact is discussed at pages 4.3-40 to 4.3-41 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measures AQ-2

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. The potential air quality impacts related to operations shall be reviewed as each individual project component of the RAAP Specific Plan is implemented by reference to the latest methodology of the San Joaquin Valley Air Pollution Control District ("SJVAPCD") and compared to accepted thresholds of significance.

(2) **Remaining Impacts**. Although the implementation of the mitigation measures described above would substantially reduce the project's long-term regional air emissions, the project may still result in air quality violations because the SJVAPCD has not completed its assessments or application of all rules related to air quality. Because the assessment and application of rules related to air quality are subject to the jurisdiction of another agency, the RAAP Specific Plan Project will result in significant, unavoidable operational air quality impacts. The City finds that although changes or alterations have been required in, or incorporated into the

Project, which avoid or substantially lessen this impact, specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) **Overriding Considerations.** The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project on air quality during operations, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

B. Cultural Resources

1. **Loss of Historical Buildings (EIR Impact CUL-1).**

a) **Potential Impact**. The potential impact of the Project on historical resources through the removal of existing structures from the historical plant is discussed at page 4.5-24 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure CUL-1.

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) Effects of Mitigation: Implementation of the mitigation measure indicated above would document the eligible district and would lessen the impact, but demolition of structures cannot otherwise be mitigated.

(2) Remaining Impacts. The City finds that although changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this impact, specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) Overriding Considerations: The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

C. Noise

1. **Transportation Noise (EIR Impact NOISE-2).**

a) **Potential Impact**. The potential impact of the Project for noise caused by traffic generated by the Project to impact residences near the project site is discussed at pages 4.12-32 to 4.12-33 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure NOISE-2.

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1)Effects of Mitigation: Implementation of the mitigation measure indicated above will be effective in reducing impacts associated with transportation noise caused by vehicles accessing the project site.

(2)Remaining Impacts. The impacts on outdoor areas of residences along Claus Road will utilize a variety of noise-reducing techniques and technologies. However, because the construction of noise barriers and sound insulation treatments on individual residences will require agreements with each affect property owner, it may be infeasible or impracticable to reduce project-generated traffic noise at all affected receivers. As a result, impacts associated with transportation noise generated by the project may be significant and avoidable.

(3) Overriding Considerations: The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

2. **Cumulative Traffic Noise (EIR Impact NOISE-4).**

a) **Potential Impact**. The potential impact of project traffic associated with the build-out of the Project and other anticipated

growth in the plan area is discussed at page 4.12-37of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measures NOISE-2.

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) Effects of Mitigation: See above.

(2) Remaining Impacts: See above.

(3) Overriding Considerations: The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

C. Transportation and Traffic

1. **Truck Traffic on State Route 108 (EIR Impact TRANS-3).**

a) **Potential Impact**. The potential impact of the Project caused by truck traffic on State Route 108 and its intersection with Claus Road, Patterson Road, Atchison Street and 1st Street is discussed at pages 4.16-39 to 4.16-40 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-3.

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation:** Implementation of the mitigation measure indicated above will be effective in reducing impacts associated with project-related truck traffic on State Route 108.

(2) **Remaining Impacts.** Under Mitigation Measure TRANS-3, future development in the RAAP will pay its fair share of the cost of needed improvements. However, specific improvements have not yet been identified for the affected intersections nor are there existing plans to make the necessary improvements. Because the construction of these improvements is outside the scope of the RAAP Specific Plan Project and is subject to the jurisdiction of another agency, the RAAP Specific Plan Project will result in significant, unavoidable traffic impacts. The City finds that although changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this impact, specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) **Overriding Considerations:** The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

2. **Cumulative Impact to Traffic Operations at Claribel Road/Coffee Road (EIR Impact TRANS-5).**

a) **Potential Impact**. The potential impact of the Project to existing unacceptable operations at the intersection of Claribel Road and Coffee Road is discussed at pages 4.16-41 to 4.16-43 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-5.

c) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) Effects of Mitigation: Implementation of the mitigation measure indicated above will be effective in reducing impacts associated with project-related traffic at Claribel Road/Coffee Road.

(2) **Remaining Impacts.** Construction of Phase 2 of the North County Corridor Proj4ect may shift traffic away from the Claribel Road/Coffee Road intersection so that it would achieve an acceptable Level of Service (LOS) during the AM-peak and PM-peak. Alternately, improvements identified in the Riverbank General Plan may result in the construction of improvements that would improve the LOS during the AM-peak and PM-peak; however, these parallel improvements do not result in operations at an acceptable LOS. Moreover, given the uncertainty of the construction of either improvement, there is no guarantee that the impacts of Project-generated traffic at the intersection will be mitigated to a level of less-than-significant. Therefore, the impact of traffic generated by the project on the operations at Claribel Road/Coffee Road may be significant and avoidable. The City finds that although changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this impact, specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) **Overriding Considerations:** The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

3. **Cumulative Impact to Traffic Operations at Claribel Road/Oakdale Road (EIR Impact TRANS-6).**

a) **Potential Impact**. The potential impact of the Project to existing unacceptable operations at the intersection of Claribel Road and Oakdale Road is discussed at pages 4.16-42 to 4.16-43 of the Draft EIR.

b) **Mitigation Measures**. The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-6.

d) **Findings**. Based upon the Draft EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation:** Implementation of the mitigation measure indicated above will be effective in reducing impacts associated with project-related traffic at Claribel Road/Oakdale Road.

(2) **Remaining Impacts.** Construction of Phase 2 of the North County Corridor Project may shift traffic away from the Claribel Road/Oakdale Road intersection so that it would achieve an acceptable Level of Service (LOS) during the AM-peak and PM-peak. Alternately, improvements identified in the Riverbank General Plan may result in the construction of improvements that would improve the LOS during the AM-peak and PM-peak; however, these parallel improvements do not result in operations at an acceptable LOS. Moreover, given the uncertainty of the construction of either improvement, there is no guarantee that the impacts of Project-generated traffic at the intersection will be mitigated to a level of less-than-significant. Therefore, the impact of traffic generated by the project on the operations at Claribel Road/Oakdale Road may be significant and avoidable. The City finds that although changes or alterations have been required in, or incorporated into the Project, which avoid or substantially lessen this impact, specific economic, legal, social, technological or other considerations make infeasible additional mitigation measures or alternatives. Since no feasible mitigation measures or alternatives are available to reduce this impact to less than significant, this impact remains significant and unavoidable.

(3) **Overriding Considerations:** The environmental, economic, social and other benefits of the Project override any remaining significant adverse impact of the Project to project traffic noise, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

IV. Findings and Recommendations Regarding Significant Impacts Which Are Avoided or Mitigated to a Less-Than-Significant Level

A. Biological Resources

1. **Townsend's big-eared bat (EIR Impact BIO-1).**

a) **Potential Impact.** The potential impact of the Project, due to demolition or redevelopment of building where Townsend's big-eared bats may have maternity nests, is discussed at pages 4.4-26 to 4.4-28 of the DRAFT EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure BIO-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure BIO-1 will reduce Project impacts on maternity roosts of Townsend's big-eared bats during demolition or redevelopment of existing buildings by requiring pre-demolition/construction surveys and avoidance of noisy or intrusive activities during known maternity usages. The use of surveys will also allow for the creation of buffer zones to prevent disturbing pup-rearing and winter hibernacula seasons.

(2) **Remaining Impacts**. Any remaining impacts related to the Townsend's big-eared bat roosts resulting from demolition or redevelopment of existing structures would not be significant.

B. Greenhouse Gas Emissions

1. Greenhouse Gas Emission (EIR Impact GHG-1).

a) **Potential Impact.** The potential impact of the Project to generate greenhouse gases, either directly or indirectly, during development, construction and operation, is discussed at page 4.7-17 of the DRAFT EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure GHG-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure GHG-1 will reduce Project-related emissions of greenhouse gases through various measures, through the review of each project to be development consistent with the RAAP Specific Plan and the imposition of various mitigation measures to ensure compliance with standards set forth in the Draft EIR, including, but not limited to, technological controls for stationary sources, energy efficiency, and site design measures.

(2) **Remaining Impacts**. Any remaining impacts related to greenhouse gas emissions would not be significant.

C. **Noise**

1. **Stationary Noise Sources/Residential Receivers (EIR Impact NOISE-1).**

a) **Potential Impact.** The potential impact of the Project to exceed City standards for stationary noise on residential receivers is discussed at pages 4.12-32 to 4.12-33 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure NOISE-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure NOISE-1 will reduce Project impacts on residential receivers near the Project from stationary sources by requiring project-specific noise analyses; limiting parking lot cleaning activities to certain hours; locating trash compactors away from residential receptors; and limiting loading dock operations.

(2) **Remaining Impacts**. Any remaining impacts related to Project impacts on residential receivers near the Project from stationary sources would not be significant.

2. Construction Noise (EIR Impact NOISE-3).

a) **Potential Impact.** The potential impact of the Project to create noise during construction in excess of 60 dBA (or an increase in the ambient noise level by more than 5 dBA for multi-season construction) is discussed at pages 4.12-35 to 4.12-37 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure NOISE-3

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure NOISE-3 will reduce Project impacts from construction-related noise by requiring limiting the hours of construction and by precluding construction on Sundays and holidays; by requiring mufflers and limiting idling of combustion engines; by routing traffic via designated construction routes and precluding heavy truck traffic in residential areas; and by limiting the use of radios or other amplified sound by workers.

(2) **Remaining Impacts**. Any remaining impacts related to construction-related noise in excess of specified standards would not be significant.

C. **Public Services**

1. **Fire Protection and Emergency Rescue Service (EIR Impact PUB-1).**

a) **Potential Impact.** The potential impact of the Project to exacerbate existing deficiencies in response times and in ISO ratings is discussed at pages 4.14-7 to 4.14-14 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure PUB-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure PUB-1 will reduce Project impacts on fire response times and ISO ratings by requiring the provision of a new fire station in the area of the RAAP, along with appropriate staffing and equipment.

(2) **Remaining Impacts**. Any remaining impacts related to Project impacts on fire protection and emergency rescue service would not be significant.

D. **Transportation and Traffic**

1. **Claribel Road/Coffee Road (EIR Impact TRANS-1).**

a) **Potential Impact.** The potential impact of the Project to exacerbate existing unacceptable Levels of Service (LOS) during AM-peak and PM-peak hours, as well as the Project's contribution to the meeting of warrant to signalize the intersection of Claribel

Road and Coffee Road, is discussed at pages 4.16-38 to 4.16-39 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure TRANS-1 will reduce Project impacts on operations at the intersection of Claribel Road and Coffee Road by requiring that developers in the RAAP will make "fair share" contributions to the construction of previously-identified improvements that are scheduled to begin construction in 2013. Thus, the improvements will be made prior to the impacts identified from Project-related traffic.

(2) **Remaining Impacts**. Any remaining impacts related to the potential impact of the Project to exacerbate existing unacceptable Levels of Service (LOS) during AM-peak and PM-peak hours, as well as the Project's contribution to the meeting of warrant to signalize the intersection of Claribel Road and Coffee Road, would not be significant.

2. **Claribel Road/Roselle Avenue (EIR Impact TRANS-2).**

a) **Potential Impact.** The potential impact of the Project to exacerbate existing unacceptable Levels of Service (LOS) during AM-peak and PM-peak hours, as well as the Project's contribution to the meeting of warrant to signalize the intersection of Claribel Road and Roselle Avenue, is discussed at page 4.16-39 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-2

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure TRANS-2 will reduce Project impacts on operations at the intersection of Claribel Road and Roselle Avenue by requiring that developers in the RAAP will make "fair share" contributions to the construction of previously-identified improvements that are scheduled to begin construction in 205/2016. Thus, the improvements will be made prior to the impacts identified from Project-related traffic.

(2) **Remaining Impacts**. Any remaining impacts related to the potential impact of the Project to exacerbate existing unacceptable Levels of Service (LOS) during AM-peak and PM-peak hours, as well as the Project's contribution to the meeting of warrant to signalize the intersection of Claribel Road and Roselle Avenue, would not be significant.

3. **Claribel Road/Coffee Road (EIR Impact TRANS-4).**

a) **Potential Impact.** The potential impact of the Project to substantially increase hazards due to a design feature or incompatible use is discussed at pages 4.16-40 to 4.16-41 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure TRANS-4

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure TRANS-4 will reduce the potential for future development in the RAAP Specific Plan area to substantially

increase hazards through a design feature or incompatible use by requiring the preparation of a construction management plan that includes such things as permitted construction hours, location of construction staging, use of street sweeping to remove construction debris on public streets, and traffic control measures to avoid peak hours.

(2) **Remaining Impacts**. Any remaining impacts related to the potential for future development in the RAAP Specific Plan area to substantially increase hazards through a design feature or incompatible use would not be significant.

E. Utilities and Service Systems

1. Stormwater (EIR Impact UTIL-1).

a) **Potential Impact.** The potential impact of the Project on the existing stormwater collection and retention system on-site, requiring improvements to be constructed, is discussed at pages 4.17-32 to 4.17-35 of the Draft EIR.

b) **Mitigation Measures.** The following mitigation measures are hereby adopted and will be implemented as provided by the Mitigation Monitoring and Reporting Program:

Implement RAAP Specific Plan Mitigation Measure UTIL-1

c) **Findings**. Based upon the EIR and the entire record before this Planning Commission, this Planning Commission finds that:

(1) **Effects of Mitigation**. Implementation of Mitigation Measure UTIL-1 will reduce Project impacts on stormwater collection, containment, and discharge to prevent flooding by requiring a series of improvements, including, but not limited to, measures to prevent inflow and infiltration at manholes; replacement of existing piping with improved lining and/or increased size to prevent contamination of stormwater; and improvements to reservoirs.

(2) **Remaining Impacts**. Any remaining impacts related to the on-site storm drainage system and the potential for flooding would not be significant.

IV. Findings and Recommendations Regarding Those Impacts Which are Less Than Significant

A. Specific impacts within the following categories of environmental effects were found to be less than significant as set forth in more detail in the Draft EIR.

1. **Aesthetics**

2. **Agriculture/Forestry Resources**

3. **Geology and Soils**

4. **Mineral Resources**

5. **Hazards and Hazardous Materials**

6. **Land Use and Planning**

7. **Population and Housing**

8. **Public Services**: Law Enforcement, Schools, and Library Services and Facilities

9. **Recreation**

10. **Utility and Service Systems:** Wastewater, Water Supply, and Solid Waste

B. The above impacts are less than significant for one of the following reasons:

1. The EIR determined that the impact is less than significant for the Project.

2. The EIR determined that the impact is beneficial for the Project.

3. The Project entitlements (i.e. the General Plan amendment, Specific Plan adoption, and rezoning) result in new impacts that were less-than-significant.

V. Project Alternatives

A. Background - Legal Requirements

CEQA requires that EIRs assess feasible alternatives or mitigation measures that may substantially lessen the significant effects of projects prior to approval. *Public*

Resources Code § 21002. With the exception of the "no project" alternative, the specific alternatives or types of alternatives that must be assessed are not specified. CEQA "establishes no categorical legal imperative as to the scope of alternatives to be analyzed in an EIR. Each case must be evaluated on its own facts, which in turn must be reviewed in light of the statutory purpose." *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d. 553, 556 (1990). The legislative purpose of CEQA is to protect public health, welfare and the environment from significant impacts associated with all types of development, by ensuring that agencies regulate activities so that major consideration is given to preventing environmental damage while providing a decent home and satisfying living environment for every Californian. *Public Res. Code § 21000.* In short, the objective of CEQA is to avoid or mitigate environmental damage associated with development. This objective has been largely accomplished in the Project through the inclusion of project modifications and mitigation measures that reduce the potentially significant impacts to an acceptable level. The courts have held that a public agency "may approve a developer's choice of a project once its significant adverse environment effects have been reduced to an acceptable level -- that is, all avoidable significant damage to the environment has been eliminated and that which remains is otherwise acceptable." *Laurel Hills Homeowners Assoc. v. City*, 83 Cal.App.3d 515, 521 (1978).

B. Identification of Project Objectives

The CEQA Guidelines state that the "range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant effects" of the Project. *CEQA Guidelines § 15126(d)(2).* Thus, an evaluation of the Project objectives is key to determining which alternatives should be assessed in the EIR.

The general goal of the proposed Project is completion of the reuse of the former army ammunitions plan and the use of previously undeveloped lands into a commercial/industrial complex. Generally, the Project would provide for the orderly and systematic development of a mix of commercial and industrial uses that would increase the tax base of the City, replace jobs lost through the relocation of operations to other military installations, and create new jobs as the result of providing commercial and industrial spaces of varying sizes. Finally, the implementation of the RAAP Project would address pollution on-site that impacts groundwater and other environments that occurred during prior operation on the Project site.

The specific Project objectives are discussed at pages 3-6 through 3-7 and 5-22 through 5-23 of the Draft EIR, and are incorporated herein by reference.

C. Alternatives Analysis in EIR

The CEQA Guidelines state that the "range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant effects" of the Project. The City evaluated the alternatives listed below.

1. No Project/No Development Alternative

The No Project/No Development Alternative is discussed at pages 5-4 through 5-9 of the Draft EIR. As required by CEQA, this alternative assumes that no development would occur in the Project area, other than existing industrial uses.

(a) Findings: The No Project/No Development Alternative is rejected as an alternative because it would not achieve the Project's objectives nor the objectives of the City.

(b) Explanation: This alternative would not realize the benefits of the Project nor achieve any of the Project objectives. The No Project/No Development Alternative would not provide the orderly redevelopment of the existing industrial facilities; would not provide opportunities for new commercial and industrial locations to be developed; would not offer new employment opportunities or replace employment opportunities lost as a result of the closure of the military facilities; and would not address the pre-existing on-site pollution. In addition, the No Project/No Development Alternative would not achieve the objective of generating property and sales tax revenues for the City since it was exempt from such taxes as a Federal Property.

2. Reduced Density Alternative

The Reduced Density Alternative is discussed at pages 5-10 through 5-16 of the Draft EIR. The Reduced Density Alternative would decrease the amounts and types of buildings to be renovated and/or constructed. The Reduced Density Alternative is the **environmentally superior alternative**.

(a) Findings: The Reduced Density Alternative is rejected as an alternative because the majority of impacts under that alternative are the same as, or greater than, the Project and this alternative would not achieve all of the Project objectives nor the objectives of the City. The environmental, economic, social and other benefits of the Project override the superiority of this Alternative, as more fully stated in the Statement of Overriding Considerations in Section VIII, below.

(b) Explanation: Although the Draft EIR considers this alternative to be "environmentally superior" to the other alternatives analyzed, as well as to the RAAP Project itself, the site would be redeveloped and developed but would have fewer buildings on the same acreage, thus creating many of the same impacts as the Project. While the Reduced Density Alternative would generally incorporate the same goals, policies, development standards, implementation strategies and land use designations as the Project, it would not generate as many jobs as the Project and would not provide the variety of development types sought by the City for the Project area.

3. Reconfigured Site Plan Alternative

The Reconfigured Site Plan Alternative is discussed at pages 5-16 through 5-22 of the Draft EIR. This alternative assumes slightly less development on the Project site.

(a) Findings: The Reconfigured Site Plan Alternative is rejected as an alternative because it would not avoid the significant and unavoidable impacts associated with the Project but would undermine assurances that objectives of the City could be satisfied.

(b) Explanation: This alternative would reduce the beneficial impact of the proposed Project on job creation and economic vitality for the Riverbank community as a whole. Given the large scale of the proposed project and the extensive infrastructure needed to support the project (e.g., traffic and transportation, on-site drainage and sanitary sewer) it is unknown whether this Reconfigured Site Plan alternative would be financially feasible or could be effectively integrated into the City's planning goals.

VI. Statements of Overriding Considerations Related to the RAAP Specific Plan Project Findings

As set forth in the preceding sections, the approval of the Project will result in significant adverse environmental impacts that cannot be avoided even with the adoption of all feasible mitigation measures.

In the City's judgment, the benefits of the proposed Project, as approved, outweigh its unavoidable significant effects. Having adopted all feasible mitigation measures, rejected as infeasible alternatives to the proposed Project discussed above, and recognized all significant, unavoidable impacts, the City has weighed the economic, legal, social, technological, and other benefits of the Oakdale 2030 General Plan against unavoidable significant environmental impacts in determining whether to approve the proposed Project.

Specific benefits of the RAAP Specific Plan Project include:

A. Community Benefits.

The adoption of this Specific Plan will allow development and redevelopment of a former military base into an industrial park that will create jobs and increase local revenue.

B. Job Creation.

An over-arching goal of the City's General Plan strives for the development of job-creating activities, as well as preserving and enhancing job opportunities that would otherwise be lost due to the restructuring the military base. The Project, through its ability to provide jobs for the City, plays a strong role in achieving those goals. Development of the RAAP Specific Plan Project area will create construction jobs, in addition to jobs created by new commercial and industrial operations in the revitalized and expanded footprint of the RAAP.

C. Public Revenues. The Project, through its ability to generate revenues for the City, plays a strong role in achieving the General Plan's goal of developing tax revenue-creating activities necessary to implement other city-wide objectives. No costs associated with the development of the RAAP Specific Plan Project area will be borne by existing residents of the City. In addition, developers in the RAAP Specific Plan area will contribute its fair share toward the cost of City-wide community facilities which are proposed for construction outside of the Project area, including a fire station and various roadway improvements. Finally,

this property will go from a tax exempt Federal property to a taxable property that will aid in supporting local governments. In short, the Project will increase tax revenues to the City through the addition of property value, the expansion of the housing market and commercial activities, and the overall enhancement of the City's economic base.

In accordance with section 15093 of the CEQA Guidelines, the City hereby finds that the benefits of the proposed project outweigh its unavoidable adverse environmental effects such that the adverse environmental effects may be considered "acceptable."

Exhibit B

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
Air Quality						
AQ-1a: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, a construction emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating construction period impacts to a less-than-significant level include, but are not limited to, Mitigation Measures AQ-1a through AQ-1d. Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with construction period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	Project Applicant	Prior to issuance of building permit	City of Riverbank Development Services Department	SJVAPCD to review construction specifications materials and provide compliance verification to City to retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1b: SJVAPCD Regulation VIII Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the RAAP Specific Plan shall be required to implement the following controls: ◇ All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover;	Construction Contractors	During construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

Exhibit B

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
♦ All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant;						
♦ All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by pre-soaking;						
♦ With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition;						
♦ When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained;						
♦ All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden);*						
♦ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant;						
♦ Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday; and						
♦ Any site with 150 or more vehicle trips per day shall						

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
prevent carryout and trackout.						
AQ-1c: Enhanced Control Measures. Prior to initiation of construction activities, the applicant for an individual, site-specific development under the Specific Plan, the following measures shall be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements): ◆ Limit traffic speeds on unpaved roads to 15 mph; and ◆ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	Construction Contractors	During Construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1d: Additional Control Measures. The following control measures are strongly encouraged by the SJVAPCD at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions: ◆ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; ◆ Install wind breaks at windward side(s) of construction areas; ◆ Suspend excavation and grading activity when wind exceeds 20 mph *(Regardless of wind speed, and owner/operator must comply with Regulation VIII's 20 percent opacity limitation.)*; and ◆ Limit area subject to excavation, grading, and other construction activity at any one time.	Construction Contractors	During construction	City of Riverbank Development Services Department	Review construction specifications materials and retain for administrative record/ Conduct site inspections	During regularly scheduled inspections	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-1e: The following measures may be implemented to mitigate emissions from construction equipment exhaust:	Construction Contractors	During construction	City of Riverbank Development Services Depart-	Review construction specifications	During regularly scheduled inspections	Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
♦ Use of alternative-fueled or catalyst-equipped diesel construction equipment; ♦ Minimize idling time (e.g. 5-minute maximum); ♦ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; ♦ Replace fossil-fueled equipment with electrically-driven equivalents (provided they are not run via a portable generator set); ♦ Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; and ♦ Implement activity management (e.g. rescheduling activities to reduce short-term impacts).			ment	materials and retain for administrative record/ Conduct site inspections		Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
AQ-2: Each individual project component of the Specific Plan, including those projects allowed by right, shall be analyzed for significant construction period air quality impacts. For each project-level analysis, an operational emissions estimate will be made by SJVAPCD using the latest SJVAPCD accepted methodology and will be compared to accepted thresholds of significance. Means of mitigating operational period impacts to a less-than-significant level include, but are not limited to, improving transportation and transit design (e.g., improved bikeways, transit infrastructure, and pedestrian enhancements); contributing a project's fair share to the Air Quality Mitigation Fee Fund; and contributing a project's fair share towards Transportation Control Measures implementation programs. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	Project Applicant	Prior to issuance of building permit	City of Riverbank Development Services Department	SJVAPCD to review construction specifications materials and provide compliance verification to City retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
Since approval of the RAAP Specific Plan may constitute the final discretionary approval by the City of Riverbank, each individual project component, including those projects allowed by right, shall be required to demonstrate to the SJVAPCD compliance with operational period requirements of Rule 9510 prior to issuance of the first building and/or grading permits as a condition of project approval. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure. Each individual project, including those projects allowed by right, that introduce significant sources of air pollutant emissions or stationary sources of TACs shall complete separate ambient air quality analysis and health risks assessments to ensure that violations of ambient air quality standards do not occur, including an analysis of cumulative emissions from the RAAP Specific Plan. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.						
Biological Resources						
BIO-1: Implementation of the Plan shall avoid disturbance to the maternity roosts of special-status bats during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than two weeks in advance of any demolition or construction activity involving concrete breaking or similarly noisy or intrusive activities, that would commence during the pup-rearing season (April 15 through August 31), or winter hibernacula season (October 15 through March 1, depending on weather conditions) a qualified bat biologist,	Construction Contractor	Prior to issuance of grading and construction permits	City of Riverbank Development Services Department	Site inspection	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
acceptable to the CDFG, shall conduct pre-demolition surveys of all potential special-status bat breeding habitat in the vicinity of the planned activity. Depending on the survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats: 1. If active roosts are identified during pre-construction surveys, a no disturbance buffer will be created by the qualified bat biologist, in consultation with the CDFG, around active roosts during the breeding season. The size of the buffer will take into account factors such as the following: ♦ Noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction activity; ♦ Distance and amount of vegetation or other screening between the project site and the roost; and ♦ Sensitivity of individual nesting species and the behaviors of the bats. 2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required. 3. Pre-construction surveys are not required for demolition or construction activities scheduled to occur during the non-breeding and winter hibernacula season (September 1 through October 15, and March 1 through April 15). 4. Noisy demolition or construction activities as described above (or activities producing similar substantial increases in noise and activity levels in the						Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees would be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above. 5. Bat roosts initiated during demolition or construction activities are presumed to be unaffected by the activity, and a buffer is not necessary. 6. Destruction of roosts of special-status bats and overt interference with roosting activities of special-status bats shall be prohibited. 7. The noise control procedures for maximum noise, equipment, and operations identified in Chapter 4.12, Noise, of this EIR shall be implemented. Implementation of the above mitigation measure would reduce potential impacts to the maximum extent practicable.						
Cultural Resources						
CUL-1: Prior to the demolition of buildings and structures comprising the eligible district, an Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recordation shall be conducted for the affected structures. HABS/HAER recordation could include archiving of original plans, undertaking archival research for preparation of a report, making measured drawings, and completing a photographic study of the structures.	Project Applicant	Prior to demolition of buildings and structures comprising the eligible district	City of Riverbank Development Services Department	Review HABS/HAER recordation	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
						Initials:_____ Date:_____
Greenhouse Gas Emissions						
GHG-1: Each individual project component of the Specific Plan shall be analyzed for significant GHG impacts. For each project-level analysis, appropriate BPS will be implemented or a 29 percent GHG emission reduction compared to BAU will be demonstrated. Means of mitigating GHG impacts to a less-than-significant level include, but are not limited to, technological controls for stationary sources (such as for boilers, generators, and process heaters) and the GHG emission reduction measures (such as energy efficiency, transportation, and site design measures) for development projects listed in the SJVAPCD CCAP. For each individual project, the applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	SJVAPCD to review project-level analyses and provide compliance verification to City to retain for administrative record	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
Noise						
NOISE-1: In order to reduce noise generated by activities occurring within the RAAP site, the following mitigation measures shall be implemented: ◆ Project level acoustical analyses shall be constructed for noise-generating land uses proposed as part of the Specific Plan. Exterior noise levels at residential land uses interfacing active parks, commercial land uses, or industrial land uses shall be maintained in accordance with the standards presented in the General Plan and Municipal Code. ◆ Parking lot cleaning activities in commercial and industrial areas shall be limited to daytime and	Developers and Construction Contractors	Prior to construction and site plan approval	City of Riverbank Development Services Department	Review project level acoustic analyses and retain for administrative record/ Site inspection	Review analyses once per individual development project/ Conduct site inspection at least once at beginning of operation	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
evening hours (7 a.m. to 10 p.m.). ◆ Trash compactors in commercial and industrial areas shall be located away from adjacent residential receivers or shielded with noise barriers. ◆ Loading dock hours of operation shall be limited to daytime and evening hours (7 a.m. to 10 p.m.).						
NOISE-2: Noise reduction methods shall be implemented to reduce generated by activities resulting from the Specific Plan. These measures shall include, but are not limited to the following: ◆ Paving streets with "quieter" pavement types such as Open-Grade Rubberized Asphaltic Concrete would reduce noise levels by 2 to 3 dBA depending on the existing pavement type, traffic speed, traffic volumes, and other factors. ◆ New or larger noise barriers could reduce noise levels by 5 dBA Ldn. Final design of such barriers, including an assessment of their feasibility and reasonableness, should be completed during project level review. ◆ Sound insulation treatments to affected buildings, such as sound rated windows and doors, could reduce noise levels in interior spaces. ◆ Installing traffic calming measures to slow traffic along Claus Road could provide qualitative improvement by smoothing out the rise and fall in noise levels caused by speeding vehicles.	Project Applicant	Prior to construction and site plan approval	City of Riverbank Development Services Department	Consider measures to include in construction and site plans	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
NOISE-3: To reduce noise levels generated by construction, the following standard construction noise control measures shall be included in all construction projects within the plan area: ◆ Limit construction to the hours of 7:00 a.m. to 6:30	Construction Contractors	Prior to construction	City of Riverbank Development Services Department	Review construction plans and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
p.m. on weekdays, and 9:00 a.m. to 5:00 p.m. on Saturdays, with no noise-generating construction on Sundays or holidays.						Initials:_____ Date:_____
♦ Equip all internal combustion engine-driven equipment with mufflers which are in good condition and appropriate for the equipment.						Initials:_____ Date:_____
♦ Unnecessary idling of internal combustion engines should be strictly prohibited.						
♦ Locate stationary noise generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 5 dBA.						
♦ Utilize "quiet" air compressors and other stationary noise sources where technology exists.						
♦ Route all construction traffic to and from the project site via designated truck routes where possible. Prohibit construction related heavy truck traffic in residential areas where feasible.						
♦ Control noise from construction workers' radios to a point that they are not audible at existing residences bordering the project site.						
♦ The contractor shall prepare and submit to the City for approval a detailed construction plan identifying the schedule for major noise-generating construction activities.						
♦ Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance						

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.						
NOISE-4: Implement Mitigation Measure NOISE-2.	Project Applicant	Prior to construction and site plan approval	City of Riverbank Development Services Department	Consider measures to include in construction and site plans	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
Public Services						
PUB-1: The City shall coordinate with Stanislaus Consolidated Fire Protection District to ensure fair share development fees for future development resulting from the implementation of the RAAP Specific Plan to ensure equipment, staffing, and facilities for emergency medical services, urban search and rescue, hazardous materials emergency response, and other relevant needs, as appropriate.	City of Riverbank	Prior to issuance of building permits	City of Riverbank Development Services Department and Stanislaus Consolidated Fire Protection District	Review the RAAP Specific Plan	Once	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
						Date:_____
Transportation and Traffic						
TRANS-1: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Coffee Road intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service at the Claribel Road/Coffee Road intersection level to LOS C or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Stanislaus County plans to signalize this intersection as part of the Claribel Road widening project. Funding for signalization is provided from Congestion Mitigation and Air Quality (CMAQ) Federal funding. Construction is scheduled to begin in 2013.	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	Obtain proof of payment and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-2: Future developers within the RAAP area shall contribute their fair share, through the payment of local and regional fees, towards the construction of left-turn pockets on all approaches to the Claribel Road/Roselle Avenue intersection with appropriate storage and deceleration length, and signalization of the intersection. This improvement would improve the service level at the Claribel Road/Roselle Avenue intersection to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown on Table 4.16-9. Signalization of this intersection is programmed in the Stanislaus County 2011-2012 budget using CMAQ funding and is scheduled for construction in 2015/2016.	Project Applicant	Prior to issuance of building permits	City of Riverbank Development Services Department	Obtain proof of payment and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-3: Future developers within the RAAP area	Project Applicant	Prior to issuance	City of Riverbank	Obtain proof	Once per	Initials:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
shall contribute their fair share towards improvements to provide adequate turning radii in conformance with STAA requirements at intersections on State Route 108, specifically at the intersections of Atchison Street (State Route 108)/1st Street, State Route 108/Claus Road and State Route 108/Patterson Road, though the payment of local and regional traffic fees. No other improvements are needed to mitigate project impacts at these intersections.		of building permits	Development Services Department	of payment and retain for administrative record	individual development project	Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-4: Although construction impacts are expected to be temporary and less-than-significant, for all future development in the plan area, the following is recommended to minimize the effects of construction related activity: ♦ Prepare a construction management plan, including: • Project staging plan to maximize on-site storage of materials and equipment. • A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak hours; lane closure proceedings; signs, cones, and other warning devices for drivers; and designation of construction access routes. • Permitted construction hours. • Location of construction staging. • Provision of on-site parking for all construction employees, site visitors, and inspectors. • Provisions for street sweeping to remove construction related debris on public streets.	Project Applicant	Prior to construction	City of Riverbank Development Services Department	Review construction management plan and retain for administrative record	Once per individual development project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
TRANS-5: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS C would be achieved. Alternatively, intersection improvements beyond the cross-section identified in the General Plan could be provided to improve peak hour operations, such as dual left-turn lanes and right-turn only lanes on all approaches. This improvement would improve the service level to LOS E during the AM peak hour and LOS D during the PM peak hour, as shown on Table 4.16-10. These service levels are considered deficient for this intersection. Given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the planned General Plan cross section, this impact is expected to remain significant and unavoidable.	County of Stanislaus	Implementation of North County Corridor Project	City of Riverbank	Continue monitoring of conditions following completion of North County Corridor Project	Following completion of North County Corridor Project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____
TRANS-6: Construction of Phase 2 of the North County Corridor Project, which would connect the Phase 1 project, which is planned to terminate at McHenry Avenue, to State Route 99, is expected to shift sufficient traffic from this intersection that LOS D would be achieved. Alternatively, construction of additional improvements at this intersection that would result in acceptable service levels, including dual left-turn pockets on the northbound, westbound, and eastbound approaches could be constructed. This improvement would improve the service level to LOS D or better (the level of service standard for this intersection) in both peak hours, as shown in Table 10 of the TIA, reducing this impact to a less-than-significant level. However, given the uncertainly of constructing parallel capacity or the feasibility of additional improvements beyond the	County of Stanislaus	Implementation of North County Corridor Project	City of Riverbank	Continue monitoring of conditions following completion of North County Corridor Project	Following completion of North County Corridor Project	Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____ Initials:_____ Date:_____

SUMMARY OF MITIGATION MEASURES AND MONITORING PROGRAM FOR THE RIVERBANK SPECIFIC PLAN EIR

Mitigation Measures	Party Responsible for Implementation	Implementation Trigger/Timing	Agency Responsible for Monitoring	Monitoring/ Reporting Action	Monitoring Frequency	Monitoring Compliance Record (Name/Date)
planned General Plan cross section, this impact is expected to remain significant and unavoidable.						
♦						

Riverbank Army Ammunition Plant Specific Plan

Addendum to the Final Environmental Impact Report

State Clearinghouse #2011022015

Prepared for:

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October 4, 2022

SCH# 2011022015

Riverbank Army Ammunition Plant Specific Plan
in the City of Riverbank and Stanislaus, California

Addendum to the Environmental Impact Report

City of Riverbank

10-11-2022
Date of Certification

Donna Kenney
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City of Riverbank
CEQA Lead Agency

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INTRODUCTION

The City of Riverbank (City) previously approved the Riverbank Army Ammunition Plant (RAAP) Specific Plan. The RAAP site was formerly owned and operated under control of the United States Army (Army) and was selected for closure as part of the Base Closure and Realignment (BRAC) in 2005. The site is approximately 146 acres in area. The northern and southern areas of the site remain undeveloped, and the central portion of the site contains the RAAP's existing buildings and infrastructure which was previously used to manufacture shell casings, mortar grenades and other ammunition components. The Specific Plan provides the zoning for the RAAP site and permits a mix of industrial, office/research and development, and retail uses within the Specific Plan Area. The environmental study of the Specific Plan culminated in an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA). The City is the Lead Agency under CEQA.

BACKGROUND

On March 29, 2013, the Draft EIR for the Specific Plan was made available for public review. The Draft EIR was distributed to local and State responsible and trustee agencies and the general public was advised of the availability of the Draft EIR through public notice published in the local newspaper and on the City website. The EIR was approved by the City Council on February 10, 2014 (as approved, the "EIR").

As part of the ongoing development of the RAAP Site, the City acquired title to a portion of the property from the Army referred to as Parcel B. The City subsequently sold Parcel B to Aemetis Properties Riverbank, Inc. for development purposes. Aemetis is planning to drill a geologic characterization well on Parcel B to provide information it can use to determine potential future uses (described more below). The City has previously determined that the well is a permitted use within the Parcel B zoning established by the Specific Plan, and development on Parcel B is part of the overall development of the RAAP site that is covered by the EIR. The Specific Plan's description of the environmental review process for projects at the RAAP site states that the EIR may cover some development without need for additional CEQA documentation, but some potential development may need additional documentation. (See Specific Plan, p. 117.) This current Addendum is intended to update the project description in the EIR to include the planned geologic characterization well.

PROJECT DESCRIPTION

Specific Plan Project Description

The RAAP site was formerly owned and operated under control of the United States Army (Army) and was selected for closure as part of the Base Closure and Realignment (BRAC) in 2005. The site is approximately 146 acres in area. The northern and southern areas of the site remain undeveloped, and the central portion of the site contains the RAAP's existing buildings and infrastructure which was previously used to manufacture shell casings, mortar grenades and other ammunition components. The developed portion of the RAAP site contains approximately 150 existing structures, most of which are industrial in character. These structures are generally single-story, utilitarian buildings designed to house manufacturing activities. Areas between buildings are generally paved and used for parking, storage, or circulation. The undeveloped areas to the north and south of the existing RAAP site facilities are generally grasslands. Portions of the northern area serve as grazing land.

The existing industrial area on the RAAP site is bordered on the north, east, and south by pasture land and rural residential uses. Low-density residential uses are located across Claus

Road on the northern half of the site. A small vehicle storage lot is located across Claus Road between Minniear and Van Dusen Avenues. The Hetch Hetchy Aqueduct and power lines run roughly east-west across the site on a strip of land approximately 100 feet wide. The Oakdale Irrigation District Canal runs northeast-southwest through the site and is approximately 60 feet wide. An active rail line with a 50-foot easement enters the site at the north-west corner, crosses both the Hetch Hetchy Aqueduct and Oakdale Irrigation District Canal, and continues into the site where it serves many of the existing buildings.

The purpose of the Specific Plan was to create zoning for the RAAP site that would permit a mix of industrial, office/research and development (R&D), and retail uses within the Specific Plan Area. The EIR anticipated redevelopment of the site would occur in the following ways:

Existing Industrial Areas. The Specific Plan recommends that existing industrial areas should generally be retained as they are now. The Specific Plan also allows for additional buildings, and removal of and modifications to existing buildings in this area, with policies in place to maintain the historic character and preserve the viability of this area for future industrial uses. Additional landscaping is also recommended for this area in the Specific Plan, both for improved aesthetics and to implement principles of low-impact development (LID). It is anticipated that new development in this area would be of a similar character to existing development.

North End Cap. The Specific Plan recommends a mix of R&D and industrial uses in this area. Recommended uses range from industrial uses to higher-end office and R&D uses.

Retail. The zoning established by the Specific Plan allows primarily retail uses in certain areas, including the west side of the RAAP site along Claus Road, between the Van Dusen Avenue and Minniear Avenue intersections, and at the prominent corner of Claribel and Claus Roads. Other specified uses in these areas can be built subject to a conditional use permit.

South End Cap. Most of the southern undeveloped area on Claribel Road is proposed for R&D/industrial uses.

For purposes of evaluating the effects of establishing the above zoning areas pursuant to the Specific Plan, the EIR analyzed the effects of the zoning changes as well as the build-out of the site pursuant to the new zoning.

New Project Features

Aemetis is planning to drill a geologic characterization well, otherwise known as a vertical stratigraphic test well. The well would be drilled at the Riverbank pad located approximately 1,140 feet east of Claus Road and 1,000 feet south of Kentucky Avenue in the northeast quadrant of the RAAP property. The primary purpose of the well is to help determine whether the area around Riverbank is suitable for future carbon capture and sequestration. Those types of future activities are not yet completely determined and will require a host of separate federal and state permits, as well as additional environmental review if a specific project is developed.

The geologic characterization well would be drilled to a total depth of approximately 7,100 feet. At approximately 80 feet, a 14-inch conductor will be set. At approximately 1,500 feet, a 9 5/8-inch surface casing will be set to protect underground source of drinking water zones. At

approximately 4900 feet, a 5 ½ -inch casing would be set. Core samples will be taken in portions of the Sawtooth and Lathrop Formations. The Sawtooth Formation occurs at an approximate depth of 4768 feet and the Lathrop Formation occurs at an approximate depth of 5823 feet. Electric logs will be run and sidewall cores will be taken from the Sawtooth and Lathrop Formations. The well bore will initially be plugged back to the base of the 5 ½-inch casing, and may later be completely closed in. In addition to any other permits required by applicable law, Aemetis plans to seek a permit from **California Department of Conservation's Geologic Energy** Management Division (CalGEM) for the characterization well, which will incorporate compliance **with CalGEM's standards for such wells.**

Well drilling would take approximately 8 weeks and drilling operations will take place up to 24 hours per day during that period. During the drilling operations, a 24-ft high sound barrier wall will be constructed including a 200-foot section of wall on the north side and 120-foot section of wall on the east side of the proposed site, which would join together in the northeast corner.

APPROPRIATE CEQA DOCUMENTATION FOR THE PROPOSED REVISION

In accordance with Section 15164(a) of the CEQA Guidelines, "The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

The conditions in Sections 15162(a) include:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
    A. The project will have one or more significant effects not discussed in the previous EIR or Negative Declaration;
    B. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
    C. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
    D. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

In order for the City, as the lead agency, to use an Addendum as the appropriate CEQA document, CEQA Guidelines § 15164(e) states that "A brief explanation of the decision to not prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to the EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence."

Environmental Analysis

As previously stated, the 2014 EIR identified potentially significant impacts for several environmental resources associated with the development and build out of the RAAP site, including air quality, cultural resources, noise, and transportation and traffic. As a result, the EIR necessarily analyzed these impacts and for the construction activities and discussed mitigation measures. Pursuant to the determinations in the EIR, most of the impacts from the full site build out would be less than significant or reduced to a less than significant level with implementation of mitigation. This addendum covers an update to the Project to also describe the new geologic characterization well and determine whether the addition of the well to the EIR's project description would have impacts satisfying the criteria of Section 15162 described above.

Aesthetics

Would the Project result in:

a) Have a substantial adverse effect on a scenic vista?
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The new geologic characterization well would not have any potential impact on a scenic vista, as it will not be located near any scenic views as designated in the Riverbank General Plan. There would be no potential impact on a scenic highway. The nearest official State Scenic Highway is Interstate 5, which is located 20 miles to the west of the Project area. The existing visual character of the RAAP site is predominantly industrial. The site's visual character is composed of corrugated metal warehouses, chillers, smokestacks, water and gas storage tanks, the metal tubing, and electrical wiring. Viewing the site is possible from all directions surrounding the property, through barbed wire fences. The Project would involve constructing a temporary 24-foot-high sound barrier wall around the drill site during construction. The wall is expected to be a steel framed structure (similar to large fence posts) covered on the outside with earth-toned sound deadening fabric. The wall will be evaluated prior to construction to determine if it needs a building permit. The temporary wall would not degrade the visual quality of the site and its surroundings because it falls in line with the land use designation. The proposed Project would likely introduce new lighting features during construction operations, similar to those currently existing within the Project site. The sound barrier wall and lighting would be temporary during drilling activities, which are only anticipated to last up to 8 weeks. After construction, the well will only consist of a small permanent wellhead, which would not generally be visible. The previous EIR did not find any significant impacts relating to aesthetics, and the geological characterization well would not result in any new, previously unidentified impacts.

Agriculture and Forest Resources

Would the Project result in:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
d) Result in the loss of forest land or conversion of forest land to non-forest use?
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The new geologic characterization well site does not contain any areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The areas of Farmland of Local Significance in the Plan Area are not considered farmland of concern under CEQA. There are no

Williamson Act lands within the Project site. There are no timber resources in Riverbank, so impacts to timber resources are not anticipated. The Project site contains very few trees and construction of the new well would not result in conversion of forest land. The new well would not result in conversion of farmland to non-agricultural use, since the well would not be located on farmland, but rather industrial land. The previous EIR already analyzed a project that would involve construction on virtually all of the RAAP site and did not find any significant impacts relating to agriculture and forest resources, and the geological characterization well would not result in any new, previously unidentified impacts.

Air Quality

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?
c) Expose sensitive receptors to substantial pollutant concentrations?
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction of the geologic characterization well would not conflict with or obstruct implementation of an applicable air quality plan. The well installation activities will be only temporary, with no air impacts following completion. The impacts during construction will be similar to but less than the construction activities already analyzed in the EIR, which could include a temporary increase in particulate dust and other criteria pollutants, emissions from construction equipment exhaust and worker vehicle trips. This impact was already determined in the existing EIR to be potentially significant, and mitigation measures adopted. Construction emissions would be temporary and would cease upon completion. The well is not expected to create significant odor sources. The construction of the well will be required to comply with San Joaquin Valley Air Pollution Control District air emissions and permitting rules, to the extent applicable, which will include notices and registration of portable equipment. The previous EIR found significant impacts relating to air quality; however, the geological characterization well would not result in any new, previously unidentified impacts not previously analyzed.

Biological Resources

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree

preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Construction of the new geologic characterization well would not have the potential to impact biological resources. The previous EIR analyzed the build out of the entire RAAP site and found that impacts relating to biological resources would be less than significant with implementation of mitigation measures. The geological characterization well would occupy only a small portion of the RAAP site, so would not result in any new, previously unidentified significant impacts.

Cultural Resources

Would the Project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Construction of the geologic characterization will occur on unoccupied land so would not involve demolition or alteration of buildings within an area that is eligible to be listed on the California Register of Historic Places. There are no known archaeological resources in the Project site and a records search of files at the Central California Information Center indicated there are no recorded prehistoric cultural resources in Riverbank. Human remains dating to the prehistoric period of California have been located at numerous locations along rivers and streams within the San Joaquin Valley, but there are no known prehistoric human remains in the vicinity of Riverbank. Nevertheless, given that prehistoric and historic settlement has generally occurred along rivers, the EIR recognized the possibility that as yet undiscovered human remains could potentially be present at the RAAP site, since the Stanislaus River is located approximately 1.5 miles north of the Project site. The previous EIR already found significant impacts relating to cultural resources and imposed mitigation measures. The geological characterization well would not result in any new, previously unidentified impacts.

Energy

Would the Project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Proposed project construction would primarily consume diesel and gasoline through temporary operation of heavy-duty construction equipment, material deliveries, and debris hauling. This temporary operation represents a small demand on local and regional fuel supplies that would be easily accommodated, and this demand would cease once construction is complete. Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. The proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during short-term construction operations. The Project would not conflict with or obstruct a state or local plan for renewable energy. The previous

EIR did not analyze impacts relating to energy; however, the geological characterization well would not result in any new, previously unidentified impacts.

Geology and Soils

Would the Project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
ii) Strong seismic ground shaking?
iii) Seismic-related ground failure, including liquefaction?
iv) Landslides?
b) Result in substantial soil erosion or the loss of topsoil?
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The new geologic characterization well site is not located within an Alquist-Priolo Earthquake Fault Zone and is not located on an active fault as designated by the California Geologic Survey. Appropriate geological research and modeling has been performed as part of the well design, and there is no expected risk of seismic events as a result of the well or any future activities. The Project site has flat topography, which means that landslides or other similar hazards would not occur. Land subsidence is not characteristic of soils in Riverbank and the Project site. As such, the well would not be located on a geologic unit that is unstable. The new well would not create substantial direct or indirect risks to life or property. No septic tanks or alternative wastewater disposal systems would be required to serve the new well. The EIR determined that there are no known paleontological resources located at the RAAP site. Since the well site is located on small portion of the larger site, it is unlikely that, yet undiscovered paleontological resources would be disturbed. The previous EIR did not find any significant impacts relating to geology and soils, and the geological characterization well would not result in any new, previously unidentified impacts.

Greenhouse Gas Emissions

Would the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Short-term construction emissions from the new geologic characterization well are anticipated. Emissions from construction equipment would include all equipment powered by gasoline and diesel engines. The EIR previously analyzed the overall construction of the entire RAAP site, so the temporary construction of the well is within the size and length of construction anticipated.

The previous EIR found that impacts relating to greenhouse gases would be less than significant with implementation of mitigation measures. The geological characterization well would not result in any new, previously unidentified impacts.

Hazards and Hazardous Materials

Would the Project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The new geologic characterization well is not anticipated to emit hazardous air emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The nearest school is California Ave. Elementary School which is approximately half a mile away from the Project site. Construction of the well would be temporary, and all well drilling byproducts would be captured in tanks or other lined structures and then disposed off-site at properly licensed landfills. The Project site is located approximately 1.2 miles from the Peterson Airport, a privately owned airport located at 5800 Langworth Road. The landing strip runs from east to west, and the landing approach is from the southwest. The Project would not interfere with an adopted emergency response plan or emergency evacuation plan. The geologic characterization well would not expose people, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires. The previous EIR did not find any significant impacts relating to hazards and hazardous materials, and the geological characterization well would not result in any new, previously unidentified impacts.

Hydrology and Water Quality

Would the Project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
(i) result in substantial erosion or siltation on- or off-site;
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in

flooding on- or offsite;
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
(iv) impede or redirect flood flows?
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The new geologic characterization well would be constructed per the California Department of Conservation's Geologic Energy Management Division (CalGEM) permitting and regulatory program requirements. A CalGEM permit to construct and drill a well requires the operator to follow standard best practices and measures to protect the hydrology and water quality of subsurface formations and underground sources of drinking water (USDWs). During drilling of the well, a 9 5/8-inch surface casing will be set to protect underground source of drinking water zones. No impacts to drainage patterns are anticipated to result due to the project. The well site is not within a flood hazard, tsunami, or seiche zones, and would not risk the release of pollutants due to project inundation. The well would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The previous EIR did not find any significant impacts relating to hydrology and water quality, and the geological characterization well would not result in any new, previously unidentified impacts.

Land Use and Planning

Would the Project:

a) Physically divide an established community?
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The new geologic characterization well would have no potential to divide an established community, or conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The previous EIR did not find any significant impacts relating to land use and planning, and the geological characterization well would not result in any new, previously unidentified impacts.

Mineral Resources

Would the Project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Mineral resources are known to be present in the Project site. The Project site is classified as MRZ-3 and concrete aggregate (sand and gravel) are potentially present in this portion of the Project site, although it has not been determined whether significant quantities of this commodity are in fact present at this location. The EIR already analyzed a project that would develop most of the RAAP site, and the well will take only a small area. The Site is also surrounded by land uses incompatible with mining activities, including residences and agricultural land. Future use of this site for mineral extraction is unlikely and therefore implementation of the well would not result in a significant loss of available minerals at this location. There are no mines located in the Project

site. The closest active mine is the Munn and Perkins Pit, located approximately 3.8 miles to the northwest of the RAAP Site in Escalon, San Joaquin County. While the RAAP Site could potentially contain significant quantities of construction aggregate, it has not been determined that significant quantities of the commodity do in fact exist on the site. The construction of a new geologic characterization well would have no potential to affect any mineral resources within the area. The previous EIR did not find any significant impacts relating to mineral resources, and the geological characterization well would not result in any new, previously unidentified impacts.

Noise

Would the Project:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
b) Generation of excessive groundborne vibration or groundborne noise levels?
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction of the geologic characterization well would result in temporary construction noise during the 8-week drilling period. A Drilling Noise Management Plan was prepared to be implemented during construction of the proposed geologic characterization well. The plan recommended a 320 linear foot long 24-ft high sound barrier wall with a Sound Transmission Class (STC) rating of at least 25 on the partial north and east sides of the proposed site with no openings or gaps in the wall. This sound barrier wall would be implemented as a project feature **and construction noise would remain within the City and County's noise thresholds**. Construction noise would be temporary and no permanent increase in noise is anticipated as result of the geologic characterization well. The previous EIR found potentially significant impacts relating to noise; the geological characterization well would not result in any new, previously unidentified impacts.

Population and Housing

Would the Project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project is a geologic characterization well and would have no potential to effect population and housing. The previous EIR did not find any significant impacts relating to population and housing, and the geological characterization well would not result in any new, previously unidentified impacts.

Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered

governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

a) Fire protection?
b) Police protection?
c) Schools?
d) Parks?
e) Other public facilities?

The new geologic characterization well is not anticipated to require any public services. Construction of the geologic characterization well would not require any fire or police protections, and would have no potential to affect service ratios, response times or other performance objectives of public services. The previous EIR did not find any significant impacts relating to public services, and the temporary approximately 8-week period of drilling the geological characterization well would not result in any new, previously unidentified impacts.

Recreation

Would the project:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The new geologic characterization well site is not within or near any recreational facilities; therefore, there would be no potential to impact recreation. The previous EIR did not find any significant impacts relating to recreation, and the geological characterization well would not result in any new, previously unidentified impacts.

Transportation

Would the Project:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
d) Result in inadequate emergency access?

The proposed project is a geologic characterization well and would have no effect on transportation and traffic. The previous EIR found significant impacts relating to transportation and traffic associated with major construction at the RAAP site. The traffic activity associated with the geological characterization would be relatively small compared to the traffic analyzed in the EIR, so would not result in any new, previously unidentified impacts.

Tribal Cultural Resources

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place,

cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

There are no known tribal or archaeological resources at the site of the geologic characterization well, and a records search of files at the CCIC indicated there are no recorded prehistoric cultural resources in Riverbank. Construction of the geological characterization well would have no potential to impact tribal cultural resources. The previous EIR did not analyze impacts relating to tribal cultural resources; however, the geological characterization well would not result in any new, previously unidentified impacts.

Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The new geologic characterization well would not require any new utilities or service systems to be constructed. Construction of the geologic characterization well will be self-contained and would not exceed any utility or service system demands and would comply with all regulations regarding utilities or service systems. The previous EIR did not find any significant impacts relating to utilities and service systems, and the geological characterization well would not result in any new, previously unidentified impacts.

Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*
d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As discussed in the City of Riverbank General Plan, no areas or zones in the RAAP site are defined as Very High Fire Hazard Severity, and the RAAP site is not in a State responsibility area. The well construction would not expose people, either directly or indirectly, to a significant risk of loss, injury or death involving wildfires; therefore, there would be no potential to impact wildfire. The previous EIR did not analyze impacts relating to wildfire; however, the geological characterization well would not result in any new, previously unidentified impacts.

Mandatory Findings of Significance

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*
b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*
c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

The proposed geological characterization well would not result in the substantial degradation of the environment or habitat impacts and would not result in cumulative considerable or substantial direct or indirect impacts to human beings. The well drilling will be a temporary activity that is located at the same property analyzed in the EIR and the construction activity is within the envelope of activity analyzed in the EIR. The previous EIR did analyze impacts relating to cumulative impacts; however, the geological characterization well would not result in any new, previously unidentified impacts.

Environmental Analysis Summary

No new significant impacts to the environment as a result of constructing the geologic characterization well have been identified.

DETERMINATION OF APPROPRIATE CEQA DOCUMENTATION

Section 15162 - Subsequent EIRs and Negative Declarations

a) "When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in light of the whole record, one or more of the following:"

1) "Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;"

Based on the analysis above, the addition of the geologic characterization well to the project description will not create "new significant environmental effects" or "substantially increase" "the severity of previously identified significant effects." Therefore, an addendum is appropriate under this standard.

2) "Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or"

The proposed modifications to the project description have been evaluated for potential environmental impact. There is nothing to indicate that circumstances have changed so that the conclusions of the EIR are no longer sufficient. The modifications to the project description are minor and would not result in in a new or more severe significant environmental effect.

3) "New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

A) "The project will have one or more significant environmental effects not discussed in the previous EIR or negative declaration;"

No new information is available to determine that significant environmental effects identified in the EIR were not properly analyzed.

B) "Significant effects previously examined will be substantially more severe than shown in the previous EIR;"

No new information is available to determine that the potentially significant impacts previously discussed in the EIR would be more severe in relation to the geologic characterization well.

C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or"

Not applicable. No mitigation measures or evaluated alternatives were previously found to be infeasible in the EIR.

D) **"Mitigation measures or alternatives which are considerably different from those** analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure **or alternative."**

Not applicable. No mitigation measures or evaluated alternatives which are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment from the 2013 Final EIR.

None of the conditions listed in subsection (a) would occur due to the proposed modification. No subsequent EIR is required.

Section 15164 - Addendum to an EIR or Negative Declaration

"(a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

This Addendum, and the information provided herein, satisfies the requirements of this Section of the CEQA Guidelines. This Addendum provides the necessary changes to the project description of the EIR. None of the conditions described in Section 15162 calling for preparation of a subsequent EIR are present. Therefore, an addendum to the adopted EIR is the appropriate CEQA document for the proposed project modifications.

"(c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration."

This Addendum will be attached to the approved EIR and maintained in the administrative record files at the City.

"(d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project."

The City of Riverbank will consider this Addendum as part of the full environmental record prior to making a decision on the proposed project revision.

"(e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence."

This document provides substantial evidence for the City of Riverbank to support the decision to prepare an Addendum for the proposed project modification.

CONCLUSION

This Addendum has been prepared in accordance with the provisions of the State CEQA Guidelines and it documents that none of the conditions or circumstances that would require preparation of a subsequent EIR, pursuant to Sections 15162 and 15164 of the State CEQA guidelines, exist in connection with the currently proposed project. No major revisions would be required to the prior environmental documents as a result of the changes to include construction of a new geologic characterization well. No new or more severe significant environmental impacts have been identified and preparation of a subsequent EIR is not needed for the proposed project.

Pursuant to the provisions of California Public Resources Code §21082.1, the City will review and analyze the information contained in this Addendum and the EIR prepared pursuant to CEQA and the State CEQA Guidelines. This Addendum and the approved EIR will be maintained in the administrative record files at the City offices.