APPENDICES

APPENDIX 1
NOP Comments

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

July 25, 2008

JUL 30 2008

To: Reviewing Agencies

Re: North Bay Recycled Water Program
SCH# 2008072096

Attached for your review and comment is the Notice of Preparation (NOP) for the North Bay Recycled Water Program draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Marc Bautista
Sonoma County Water Agency
P.O. Box 11628
Santa Rosa, CA 95406-1628

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

for: Scott Morgan
Project Analyst, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

JUL 30 2008

SCH# 2008072096
Project Title North Bay Recycled Water Program
Lead Agency Sonoma County Water Agency

Type NOP Notice of Preparation

Description The North Bay Reuse Authority is proposing the North Bay Water Recycling Program (formerly known as North San Pablo Restoration and Reuse Project) to increase regional use of recycled water in the North San Pablo Bay region. The proposed Program will include construction and operation of treatment facilities, distribution pipelines, pump stations and storage facilities to provide recycled water in the region, which encompasses approximately 318 square miles within Marin, Sonoma and Napa counties. Three alternatives for recycled water use are being considered, with the level of facility improvements dependent upon the level of recycled water use. Pipeline and pumping facilities would be installed within or along existing roadways. Treatment and storage facilities would be located at or near existing wastewater treatment plants.

Lead Agency Contact

Name Marc Bautista
Agency Sonoma County Water Agency
Phone (707) 547-1923 **Fax**
email
Address P.O. Box 11628
City Santa Rosa **State** CA **Zip** 95406-1628

Project Location

County Sonoma, Marin, Napa
City
Region
Cross Streets
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways 101
Airports
Railways
Waterways Several, North San Pablo Bay
Schools
Land Use Residential/Agricultural/Commercial

Project Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Game, Region 3; Native American Heritage Commission; California Highway Patrol; Caltrans, District 4; State Water Resources Control Board, Division of Loans and Grants; State Water Resources Control Board, Division of Water Quality; State Water Resources Control Board, Division of Water Rights

Date Received 07/25/2008 **Start of Review** 07/25/2008 **End of Review** 08/25/2008

Note: Blanks in data fields result from insufficient information provided by lead

NOP Distribution List

County: Sonoma, Marin, Napa SCH# 2008072038

Resources Agency

- [ ] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  David Johnson
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [ ] **Dept. of Conservation**
  Sharon Howell
- [ ] **California Energy Commission**
  Dale Edwards
- [ ] **Cal Fire**
  Allen Robertson
- [ ] **Office of Historic Preservation**
  Wayne Donaldson
- [ ] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **Central Valley Flood Protection Board**
  Mark Herald
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Game Region 2**
  Jeff Drongesen
- [ ] **Fish & Game Region 3**
  Robert Floerke
- [ ] **Fish & Game Region 4**
  Julie Vance
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Gabrina Getchel
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Robert Sleppy
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Veronica Malloy
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Debby Eddy
- [ ] **Office of Emergency Services**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [ ] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Ken Lewis
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Marina Brand
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [ ] **California Highway Patrol**
  Shirley Kelly
  Office of Special Projects
- [ ] **Housing & Community Development**
  Lisa Nichols
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Jeff Pulverman
- [ ] **Caltrans, District 4**
  Tim Sable
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Moses Stites
- [ ] **Caltrans, District 7**
  Vin Kumar
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Ryan P. Chamberlain

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Ravi Ramalingam
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **California Integrated Waste Management Board**
  Sue O'Leary
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 07/24/2008

State of California – The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

ARNOLD SCHWARZENEGGER, Governor

August 1, 2008

File: 70-0-7 Memorandum of Understanding (MOU) for North Bay Water Reuse Authority

Mr. Marc Bautista
Sonoma County Water Agency
P.O. Box 11628
Santa Rosa, CA 95406-1628

Dear Mr. Bautista:

Subject: North Bay Water Recycling Program, Counties of Marin, Napa, and Sonoma

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

Please provide a complete assessment (including but not limited to type, quantity and locations) of the habitats, flora and fauna within and adjacent to the project area, including endangered, threatened, and locally unique species and sensitive habitats. The assessment should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380). DFG recommended survey and monitoring protocols and guidelines are available at http://www.dfg.ca.gov/wildlife/species/survey_monitor.html.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to the CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/index.html; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Mr. Dan Wilson, Environmental Scientist, at (707) 944-5534; or Mr. Richard Fitzgerald, Coastal Habitat Conservation Supervisor, at (707) 944-5568.

Sincerely,

Charles Armor
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Conserving California's Wildlife Since 1870

State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Diablo Vista District
845 Casa Grande Road
Petaluma, California 94954

Arnold Schwarzenegger, *Governor*
Ruth G. Coleman, *Director*

Sonoma County Water Agency
ATTN: Mark Bautista
P.O. Box 11628
Santa Rosa, CA 95406-1628

August 21, 2008

RE: North Bay Water Recycling Program Notice Of Preparation

It has come to our attention that the North Bay Water Reuse Authority has prepared a Notice Of Preparation (NOP) for a recycled water line through the City of Sonoma. On February 9, 2007 State Park staff met with Sonoma County Water Agency staff, Kent Gylfe and Amy Mai, regarding a proposed water line through Sonoma State Historic Park (SHP). At this February 9th meeting State Parks expressed its concerns over the recycled water line traversing through Sonoma SHP (note attached letter to Kent Gylfe and Amy Mai).

Although the North Bay Water Reuse Authorities NOP does not specifically state an option for the water line running through Sonoma SHP, State Parks does not endorse any option that would require the use of park lands. Any recycled water line option that would need park lands would be inconsistent with the park unit general plan, cultural landscape plan, and with the national register of historic places designation.

In reading the NOP, State Parks does support the SVRWP 2 option as described on page 18 of the NOP. Also, the NOP was issued to us from a source other than the State Clearinghouse, which is the normal notification process. As of the date of this letter we have not received any notification from the State Clearinghouse of the NBWRA North Bay Water Recycling Program NOP.

We thank you for the opportunity to comment on the North Bay Water Recycling Program NOP If you have any questions please contact me anytime.

Sincerely,

Stephen Bachman
Associate Park & Recreation Specialist
(707)769-5652 x212

State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Arnold Schwarzenegger, *Governor*
Ruth G. Coleman, *Director*
Diablo Vista District
845 Casa Grande Road
Petaluma, California 94954

Sonoma County Water Agency
ATTN: Kent Gylfe & Amy Mai
P.O. Box 11628
Santa Rosa, CA 95406

RE: Sonoma Valley Water Recycled Project Line Alignment Through State Park Ownership

Thank you for meeting with State Park staff at the Sonoma Barracks on February 9, 2007. As per our discussions, State Park staff has concerns over potential significant impacts to park resources relating to the Recycled Water Line (RWL) alignment through State Park ownership. These concerns are outlined below.

In looking through our 2005 environmental documents, we did locate a Notice of Preparation of Environmental Impact Report mailing addressed to State Parks from the Sonoma County Water Agency (SCWA) dated September 19, 2005. This was a copy of a letter that SCWA issued to the State Clearinghouse. State Parks received this letter on September 21, 2005 and provided written comment to Amy Mai on September 28, 2005 (see attachment). We have looked through all of the 2005 and 2006 environmental documents in our files and found that State Parks did not receive a copy of the draft EIR. As a result, we unfortunately missed a critical opportunity to comment on the project.

As per our February 9 discussions at the Sonoma Barracks, staff has the following concerns: The proposed RWL location through the Vallejo Field paralleling the bike trail may disturb significant cultural resources within the park unit. Impacts to recreation along the bike trail may also be significant during construction. Noise generated during construction may be significant within the park unit as well. Finally, we are concerned about impacts to jurisdictional wetlands.

Based on these concerns State Parks feels the most viable option is to locate the RWL along 1st Street West to East Spain Street and continue the line west along East Spain Street. Should State Parks ever need irrigation in the Vallejo Fields we would be able to tie in to the RWL on East Spain Street.

Thank you for the opportunity to comment on the Sonoma Valley Recycled Water Line Project. If you have any questions please contact me anytime.

Sincerely,

Stephen Bachman
Associate Park & Recreation Specialist
California Department of Parks and Recreation
845 Casa Grande Road
Petaluma, CA 94954
(707)769-5652 x212

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 622-5491
FAX (510) 286-5559
TTY 711

AUG 2 5 2008

Flex your power!
Be energy efficient!

File: 70-0-14 North San Pablo Bay
Restoration and Reuse Project

August 25, 2008

BAG0020
SCH#2008072096

Mr. Marc Bautista
Sonoma County Water Agency
P.O. Box 11628
Santa Rosa, CA 95406

Received By
AUG 2 5 2008
Sonoma County Water Agency

Dear Mr. Bautista:

North Bay Water Reuse Authority (NBWRA) North Bay Water Recycling Program – Notice of Preparation

Thank you for including the California Department of Transportation (Department) in the environmental review process for the North Bay Water Recycling Program. The following comments are based on the Notice of Preparation.

As lead agency, the NBWRA is responsible for all project mitigations, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, and implementation responsibilities as well as lead agency monitoring should be fully discussed for all proposed mitigation measures and the project's traffic mitigation fees should be specifically identified in the Environmental Impact Report/Environmental Impact Statement.

Any required roadway improvements should be completed prior to issuance of project occupancy permits. An encroachment permit is required when the project involves work in the State's right of way (ROW). Therefore, we strongly recommend that the lead agency ensure resolution of the Department's concerns prior to submittal of the encroachment permit application; see the end of this letter for more information regarding the encroachment permit process.

Traffic Impact Study (TIS)

The Department is primarily concerned with impacts to the State Highway System and the proposed project may be adjacent to State facilities. Please ensure that the environmental analysis evaluates the traffic impacts on State facilities by applying the following criteria to determine if a TIS is warranted:

1. The project will generate over 100 peak hour trips assigned to a State highway facility.

2. The project will generate between 50 to 100 peak hour trips assigned to a State highway facility, and the affected highway facilities are experiencing noticeable delay; approaching unstable traffic flow (level of service (LOS) "C" or "D") conditions.

3. The project will generate between 1 to 49 peak hour trips assigned to a State highway facility, and the affected highway facilities are experiencing significant delay; unstable or forced traffic flow (LOS "E" or "F") conditions.

We recommend using the Department's Guide for the Preparation of Traffic Impact Studies for determining which scenarios and methodologies to use in the analysis. It is available at the following website address:
http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

Erosion Control
Discharges entering the State's ROW should comply with the Department's statewide NPDES permit with the State Water Resource Control Board (construction as well as permanent runoff.)

Cultural Resources
If construction activities are proposed within the State's ROW, the Department requires documented results of a current archaeological record search from the Northwest Information Center (NIC) of the California Historical Resources Information System before an encroachment permit can be issued. Current record searches must be no more than five years old.

The Department requires the records search, and if warranted, a cultural resource study by a qualified, professional archaeologist, to ensure compliance with NEPA (if there is federal action on the project), CEQA, Section 5024.5 of the California Public Resources Code (for state-owned historic resources) and Volume 2 of the Department's Environmental Handbook (Caltrans Standard Environmental Reference (SER), available at http://www.dot.ca.gov/hq/env/index.htm).

Work subject to these requirements includes, but is not limited to: lane widening, channelization, auxiliary lanes, and/or modification of existing features such as slopes, drainage features, curbs, sidewalks and driveways within or adjacent to State ROW.

Permits
Transportation permits - Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by the Department. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to the address below.

Office of Transportation Permits
California DOT Headquarters
P.O. Box 942874
Sacramento, CA 94274-0001

See the following website link for more information:
http://www.dot.ca.gov/hq/traffops/permits/.

Encroachment permits - Additionally, any work or traffic control within the State's ROW requires an encroachment permit that is issued by the Department. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information:
http://www.dot.ca.gov/hq/traffops/developserv/permits/

To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans which clearly indicate State ROW to the address at the top of this letterhead, marked ATTN: Michael Condie, Mail Stop #5E.

Should you have any questions regarding this letter, please call Lisa Courington of my staff at (510) 286-5505.

Sincerely,

lisa Carboni

LISA CARBONI
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

Marin Audubon Society

P.O. Box 599 | Mill Valley, CA 94942-0599 | marinaudubon.org

August 22, 2008

Marc Bautista
Sonoma Water Agency
P.O. Box 11628
Santa Rosa, CA 95406-1628

RE: NORTH BAY WATER RECYCLING PROGRAM NOP

Dear Mr. Bautista:

The Marin Audubon Society appreciates the opportunity to submit scoping comments on the North Bay Recycling Program proposed by the North Bay Water Reuse Authority. The stated purpose of the project is to "increase the regional use of recycled water." and, according to the notice the project would encompass an approximately 318 square mile-area and would include installation of facilities such as new pipelines, pump stations, additional storage, and upgrades to existing treatment capabilities. In addition to the No Project Alternative, Three Alternatives are described: Basic, Partially Connected and Fully Connected Systems.

The EIR should include a thorough discussion of the project components for each alternative, identify potential adverse impacts and recommended mitigations, including:

- A map showing the precise location for each facility,
- As explanation of what the water would be used for, identifying whether it is an existing or new use.
- A description of where the water storage ponds, reservoirs or user ponds would be constructed. Would existing habitat be destroyed to construct these facilities? What impacts would these facilities have on existing habitat and nearby habitats?
- A complete description of the existing conditions at each location where a facility is proposed
- An explanation of what habitats would be lost, modified or otherwise impacted by construction of facilities. Would any existing native habitats be changed to a different habitat type? If so, describe.
- A discuss the impact of any change in habitat type on wildlife that use areas currently.
- A discussion of wetlands or other aquatic habitats that are proposed to be created or the addition of treated water to streams or wetlands. If any of these used are proposed, the DEIR should identify and evaluate potential water quality impacts, including impacts of nutrient loads, and modifications to existing habitat
- A discussion of other potential water quality impacts. Is there a potential for accumulation of heavy metals, because treatment does not remove all metals, in habitat and/or storage areas?

- Describe all habitats that would be impacted (streams, wetlands, grassland, tree loss, etc.) and how they would be impacted.

Alternative 1:
Are there enough potential users to accommodate the quantity of water projected to be created?
Where is the reservoir to be rehabilitated in the southern portion of the Novato Service Area and what impacts would its rehabilitation create?
How would it be decided to move from one alternative to another.
Describe the use for the water in the Napa saltpond project.

Additional specific questions for Alternative 2:
Describe all habitats that would be impacted by construction of the additional pipelines.
It appears that the Las Gallinas Sanitary District line would have to be placed through diked baylands.
Where are the existing reservoirs that would be rehabilitated in the Novato SD area located?
What are "potential user" ponds and where are they located?
For expanded agricultural irrigation, what is the potential for build up of heavy metals in the soils?

Additional questions for Alternative 3:
Describe the route and additional adverse impacts that could occur from construction of additional pipeline.
Where would the storage be located to extend service to the Sears Point Area?

The **cumulative** impacts, particularly the cumulative biological impacts, of all alternatives should be discussed.
Evaluate the **growth inducing impacts** of the project. Would increasing recycled water to any area result in increased development pressure in any area? The Port Sonoma Area is of particular concern.

Thank you for responding to our questions.

Sincerely,

Barbara Salzman, Chair
Conservation Committee

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

July 31, 2008

Marc Bautista
Sonoma County Water Agency
P.O.Box 11628
Santa Rosa, CA 95406-1628

File: 70-0-7 Memorandum of Understanding (MOU) for North Bay Water Reuse Authority

RE: SCH#2008072096 North Bay Recycled Water Program: Sonoma, Marin and Napa Counties.

Dear Mr. Bautista:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an 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.
  - 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.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ 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.

Sincerely,
Katy Sanchez
Katy Sanchez
Program Analyst

CC: State Clearinghouse

Native American Contacts
Sonoma, Marin and Napa Counties
July 31, 2008

The Federated Indians of Graton Rancheria
Gene Buvelot
6400 Redwood Drive, Ste 300 Coast Miwok
Rohnert Park , CA 94928 Southern Pomo
coastmiwok@aol.com
(415) 883-9215 Home

Lytton Rancheria Band of Pomo Indians
Margie Mejia, Chairperson
1300 N. Dutton, Suite A Pomo
Santa Rosa , CA 95401
lyttonband@aol.com
(707) 575-5917
(707) 575-6974 - Fax

Cloverdale Rancheria of Pomo Indians
Patricia Hermosillo, Chairperson
555 South Cloverdale Blvd., Suite A Pomo
Cloverdale , CA 95425
clvrdler61@aol.com
(707) 894-5775
909-894-5727

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
P.O. Box 18 Wintun (Patwin)
Brooks , CA 95606
(530) 796-3400
(530) 796-2143 Fax

Wintun Environmental Protection Agency
P.O. Box 1839 Wintun (Patwin)
Williams , CA 95987
corwepa@hotmail.com
(530) 473-3318
(530) 473-3319
(530) 473-3320 - Fax

Stewarts Point Rancheria
Eric Wilder, Chairperson
3535 Industrial Dr., Suite B2 Pomo
Santa Rosa , CA 95403
tribalofc@stewartspointrancher
(707) 591-0580 - Voice
(707) 591-0583 - Fax

Dry Creek Rancheria of Pomo Indians
Harvey Hopkins, Chairperson
P.O. Box 607 Pomo
Geyserville , CA 95441
drycreek@sonic.net
(707) 473-2178

Ya-Ka-Ama
6215 Eastside Road Pomo
Forestville , CA 95436 Coast Miwok
(707) 887-1541 Wappo

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of 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# 2008072096 North Bay Recycled Water Program; Sonoma, Marin and Napa Counties.

Native American Contacts
Sonoma, Marin and Napa Counties
July 31, 2008

The Federated Indians of Graton Rancheria
Greg Sarris, Chairperson
6400 Redwood Drive, Ste 300 — Coast Miwok
Rohnert Park , CA 94928 — Southern Pomo
coastmiwok@aol.com
707-566-2288
707-566-2291 - fax

Cortina Band of Indians
Elaine Patterson, Chairperson
PO Box 1630 — Wintun / Patwin
Williams , CA 95987
(530) 473-3274 - Voice
(530) 473-3190 - Voice
(530) 473-3301 - Fax

Suscol Intertribal Council
Charlie Toledo
PO Box 5386
Napa , CA 94581
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This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2008072096 North Bay Recycled Water Program; Sonoma, Marin and Napa Counties.

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July 31, 2008

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Senator Jeff Bingaman
Chairman
Senate Energy and Natural Resources Committee
304 Dirksen Senate Building
Washington, DC 20510

October 11, 2007

RE: S.1472 North Bay Water Reuse Program Act of 2007 Companion Bill, H.R.236

Dear Chairman Bingaman and Members of the Senate Energy and Natural Resources Committee,

The Sonoma County Water Coalition (SCWC) includes 32 organizations representing more than 25,000 citizens in Sonoma County, California. The unifying momentum behind this coalition is a shared concern for the water resources of Sonoma County.

We urge you to defeat this defective bill (S.1472 North Bay Water Reuse Program Act of 2007 Companion Bill, H.R.236) in its present form, and we offer our assistance in rewriting it in the next session to address our concerns.

SCWC has steadfastly worked since 2004 to get public policies in place to protect and restore our beleaguered water resources. This includes both the Russian River and the Eel River, which each provide home to three threatened species of federally listed salmonids, as well as overdrafted and declining groundwater basins throughout the county. Our county's primary public water provider, the Sonoma County Water Agency (SCWA), has recently been subject to California State Water Resources Control Board (SWRCB) mandatory 15% cutbacks in withdrawals from the Russian River to protect Fall-run Chinook in the Russian River. SWRCB has also asked SCWA to come up with plans that involve no increases in demands for water pumped from the Russian River to supply future growth.

The necessity to plan for the long term future of reliable water supplies in our region, while protecting and restoring our natural public trust resources, has required a shift in public policy. We are working hard with public policy makers, agricultural interests, and commercial and residential ratepayers to reduce demands for potable water, to maximize water efficiencies and conservation (saving energy and greenhouse gas emissions, too), as well as supporting appropriate reuse of highly treated wastewater within the SCWA service areas to displace potable water demands, and eliminate exports of SCWA water to other regions.

We are now seeing water planning that incorporates some of the best thinking in the nation, allowing at least one city (Petaluma) to plan for its next 20 years' growth with a zero-increment in potable water demand. This example follows the lead of other municipal water suppliers in California (including Los Angeles, East Bay Municipal Utility District and Marin Municipal Water District) which have proven that intelligent

use of all water resources is not only feasible, but a requisite tool for the arid West's future.

Unfortunately, our review of the North Bay Water Reuse Program Act of 2007 ("Project") S.1472 (Feinstein, Boxer) and H.R.236 (Thompson, Woolsey) brings us to strongly oppose this legislation.

The bill fails to set any priority that the recycled water be used to offset and reduce local potable water demands first. Instead, it provides for tens of thousands of acres of new and expanded agricultural irrigation using treated municipal wastewater derived from SCWA customers. While some of this wastewater is currently discharged into San Pablo Bay, reuse of the water to substantially reduce demands on the already overtaxed SCWA water supply system should come first.

The bill fails to set any limits on exporting water, or to mandate addressing the impacts of those withdrawals of water pumped from SCWA sources from the Russian and Eel Rivers and Sonoma county groundwater to regions outside the SCWA service area in both Sonoma and Napa counties, primarily in different watersheds.

The bill fails to provide limits on the quantities of water to be used for expanded agricultural irrigation and environmental restoration in the proposed Project areas.

The bill fails to provide limits on how far the pipelines and pumps may be built.

The bill fails to provide limits on future use of the pipelines, particularly the plumbing that would serve the Napa-Sonoma Marsh Restoration Project at the tail end of the Project pipeline.

The bill precedes any environmental evaluation, under NEPA or CEQA, of the Project and its impacts, benefits and deficiencies.

For instance, similar proposals (another SCWA-proposed Bureau of Reclamation project, the North Sonoma County Agricultural Reuse Project) for use of treated wastewater in the Dry Creek and Alexander Valleys regions of the Russian River for irrigation of premium vineyards has recently met with significant opposition by local ranchers who don't want treated wastewater used for application to their world-class grapes, soils or groundwater.

Since most all of the treated wastewater for the Project (except wastewater from the city of Napa) is derived from SCWA-supplied municipal contractors' treated wastewater, that water will not be available to offset new or existing potable water demands.

While these public wastewater plant operators and water contractors have shown interest in expanding the local reuse of recycled water, some have expressed concerns over the costs to independently finance the expansion of infrastructure that would be required to meet all of their current and projected needs. Rather than providing this assistance to these public agencies and their ratepayers to improve treatment and distribution within their service areas, this Project and Bill would take that water out of their service areas to

supply a large expansion of agricultural users, primarily grape growers in Sonoma and Napa valleys, in areas that are currently water-scarce.

Indeed, even the current final Draft Sonoma County General Plan states:
"Any consideration to export additional water resources place primary priority upon the benefit of and need for the water resources in Sonoma County and shall assure that water resources needed by urban, rural and agricultural water users in Sonoma County will not be exported outside the county." (Policy WR-5a)

SCWC supports this policy, and would add equivalent protections and priorities for water resources needed by the "dependent natural resources in Sonoma County" as well.

S.1472 and H.R.236 significantly violate this trust and important public policies, and is antithetical to our community's hard work to come to grips with our intertwined water and resource and population futures.

Thank you.

Sincerely,

Stephen Fuller-Rowell
Sonoma County Water Coalition

cc: Senator Feinstein, Senator Boxer, all members of the Senate Energy and Natural Resources Committee

Linda S. Adams
Secretary for
Environmental Protection

State Water Resources Control Board

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Arnold Schwarzenegger
Governor

AUG 1 9 2008

Mr. Marc Bautista
Sonoma County Water Agency
P.O. Box 11628
Santa Rosa, CA 95406-1628

Dear Mr. Bautista:

NOTICE OF PREPARATION (NOP) FOR SONOMA COUNTY WATER AGENCY (AGENCY); NORTH BAY RECYCLED WATER PROGRAM (PROJECT); STATE CLEARINGHOUSE NO. 2008072096

Thank you for the opportunity to review the Agency's NOP. We understand that the Agency is pursuing funds from the Clean Water State Revolving Fund (SRF) Program to construct components of the Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information for the environmental document prepared for the Project.

Following the public review period of the Environmental Impact Report (EIR), please send us a copy of: (1) the draft and final EIR, (2) a resolution certifying the EIR, adopting the Mitigation Monitoring and Reporting Plan (MMRP), and making California Environmental Quality Act (CEQA) findings, including any Statement of Overriding Considerations for significant, adverse impacts that can not be fully mitigated or avoided, (3) all comments received during the review period and the Agency's responses to those comments, (4) the adopted MMRP, and (5) the Notice of Determination filed with the Governor's Office of Planning and Research for the Project. In addition, we would appreciate notices of any hearings or meetings held regarding environmental review of any projects to be funded by the State Water Board.

The SRF Program is partially funded by the U.S. Environmental Protection Agency and requires additional "CEQA-Plus" environmental documentation and review. The State Water Board is required to consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of an SRF funding commitment for the Project.

It is important to note that prior to an SRF funding commitment, projects are subject to provisions of the Federal Endangered Species Act and must obtain Section 7 clearance from the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) for any potential effects to special status species. Please be advised that under the SRF Program, the State Water Board may consult with USFWS and/or NMFS regarding all federal special status species the Project has the potential to impact. The Agency will need to identify whether the Project will involve any direct effects from construction activities or indirect effects, such as growth inducement, that may affect federally listed threatened or endangered species that are known, or have a potential, to occur on-site, in the surrounding areas, or in the service area. Identify applicable conservation measures to reduce such effects.

AUG 19 2008

cc: State Clearinghouse
(Re: SCH# 2008072096)
P. O. Box 3044
Sacramento, CA 95812-3044

Friends of the Eel River
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August 25, 2008

To: Sonoma County Water Agency
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By Email: Marc.Bautista@scwa.ca.gov
https://www.nbwra.org/response/form.php

Dear Mr. Bautista:

This letter is submitted by Friends of the Eel River ("FOER") as comments on the Notice of Preparation ("NOP") of an Environmental Impact Report /Environmental Impact Statement ("EIR/EIS") on the North Bay Water Reuse Authority's ("NBWRA") North Bay Water Recycling Program ("Project") (formerly the North San Pablo Restoration and Reuse Project).

The NOP states that the Sonoma County Water Agency ("SCWA") is acting as the Lead Agency under CEQA, and is also the largest member of NBWRA, and the Bureau of Reclamation, US Department of Interior ("USBR") is acting as the federal Lead Agency under NEPA.

In addition to the comments provided in this letter, many of FOER's concerns about the project concept, scope, intent and effects have been presented in detail since early 2007 in prior letters and extensive communications with The Bay Institute (Marc Holmes), members and staff of SCWA (including Grant Davis, Pam Jeane and Renee Weber), NBWRA members (including Bill Long), staff of ESA Consultants (including Jim O'Toole), with the Project's federal legislative sponsors (Congressman Mike Thompson, Congresswoman Lynn Woolsey, Senator Dianne Feinstein, Senator Barbara Boxer), with Senator Jeff Bingaman, Chair of the Senate Energy and Natural Resources Committee, Congressman Nick Rahall II, Chair of the House Natural Resources Committee, and California Assemblyman Jared Huffman. FOER also participated in a Scoping Comment meeting with ESA and Project staff on August 6, 2008 in Petaluma. Since first becoming aware of the nature of the Project, FOER has been attempting to address serious problems and issues as well as opportunities for improving the proposed Project. Earlier FOER comments on the Project are incorporated by reference.

Please note that no notification for the NOP was made to water rights holders, fisheries and river restoration stakeholders for the Russian River and Eel River in Mendocino and Humboldt counties.

Project Alternatives:

CEQA and NEPA require an EIR/ EIS to evaluate a reasonable range of alternatives including alternatives that will avoid or substantially reduce the adverse impacts of a proposed project. The EIR/ EIS should consider a Fourth Alternative to Alternatives 1, 2 and 3 presented, which would be an integrated alternative approach to satisfying the project objectives of *"A cooperative program in the San Pablo Bay region that supports sustainability and environmental enhancement by expanding the use of recycled water"* through the proposed project objectives:

- *Offset urban and agricultural demands on potable supplies;*
- *Enhance local and regional ecosystems;*
- *Improve local and regional water supply reliability;*
- *Maintain and protect public health and safety;*
- *Promote sustainable practices;*
- *Give top priority to local needs for recycled water; and*
- *Implement recycled water facilities in an economically viable manner.*

One of FOER's core concerns is the fact that most of the water supplied by SCWA to the local water districts and cities, which constitutes the bulk of water processed into recycled wastewater by NBWRA members, originates in the Eel River, the Russian River, and the Santa Rosa Plain Groundwater Basin ("SR Groundwater"). These sources are all in seriously degraded and overdrafted conditions, with severe negative impacts on their respective salmonid fisheries (listed Coho, Chinook and Steelhead species), water quality, temperature, flows, spawning and rearing habitats, groundwater replenishment, erosion and downcutting, and other significant, unmitigated problems.

FOER and other stakeholders in Marin, Sonoma, Humboldt and Mendocino Counties believe that the water should stay within the originating watersheds to the maximum extent possible, and be recycled to reduce demands on our overstressed rivers and groundwater, economy and fisheries, and not exported elsewhere. We want to see a forward-looking system for reuse of recycled water that maximizes this accomplishment over time, and is not principally designed as are the current Project Alternatives to reduce wastewater discharges to San Pablo Bay through the expansion of new vineyard customers who want a permanent new source of irrigation water to replace their overdrafted and compromised sources in Sonoma and Napa Valleys and Solano County.

As SCWA notes in one of its brochures for water customers and consumers:

"LESS IS MORE, ANY TIME OF THE YEAR. Using less water means more water in Lake Mendocino, Lake Sonoma and the Russian River. We rely on these sources for drinking water, wildlife habitat, and recreational activities. Using less water means more in our rivers and reservoirs. Our pristine water supplies, wildlife habitats, and world-class recreational activities in Lake Mendocino, Lake Sonoma, and the Russian River rely on our ability to use less water. The SCWA encourages you to take part in its efforts to use less water."

As the principal supplier of potable water that becomes treated and recycled wastewater for the Project, and as the largest member agency in NBWRA, SCWA is in a key position to assist, support, require, and provide inducements for upstream water demand reductions, thus helping NBWRA member districts to reduce through-put to their wastewater treatment plants, reduce discharges of treated wastewater, and reduce the size and extent of the currently proposed Project Alternatives 1, 2 and 3.

It is essential that the NBWRA Project contribute substantially over time to reducing the demands on the source waters (Eel and Russian Rivers, and SR Groundwater) by offsetting potable water demands upstream of their wastewater treatment plants. Alternatives 1, 2 and 3 do not do this in any significant way. They in fact provide treated wastewater to many new agricultural customers who will become dependent on transfers of these source waters to southern Sonoma and Napa Valleys to replace their overdrafted and saline contaminated local supplies. This, in the long run, will increase demands on the source waters for continued and higher levels of water production and diversions.

According to the Camp, Dresser McKee Preliminary Engineering Reports, the Alternatives presented in the NOP would use 5,000-11,000 horsepower for new pumps, becoming a major source of new greenhouse gas emissions, when we must be reducing that impact instead. The Project would deliver only 1400-1459AF/Yr of recycled water to displace potable urban water demands in Novato and Sonoma. A small portion of the recycled water might be used for the Napa Salt Marsh Restoration Project. The Program cost is estimated at $311-512M in capital costs, with $10-12M/yr operating costs, with costs of recycled water estimated between $2-4,000/AF.

FOER is looking for a Project Alternative that will, in the short and long term, reduce demands for diversions from these River and groundwater sources, and which increases those demand reductions over the lifespan of the Project. This would be a true reflection and implementation of a 'sustainable' project. While FOER fully supports the restoration of the Napa Salt Marsh (former Cargill lands) and reduction of discharges of treated wastewater to San Pablo Bay, the current Alternatives fail to address a series of other opportunities and problems that must be incorporated given current knowledge, engineering options, and the needs of the 21st Century.

The intent of developing and presenting a Fourth Alternative is to satisfy the stated Project objectives while also reducing demands for water diversions on the Russian

and Eel Rivers and SR Groundwater, reducing energy consumption and greenhouse gas emissions, and providing support and implementation of long-term sustainable management of the source watersheds involved in supplying water used in the Project, and supporting the restoration of the Russian and Eel Rivers and SR Groundwater.

The recreational and commercial fisheries in Humboldt, Mendocino and Sonoma Counties has already suffered significant damages from a century of water diversions, and additional increasing demands for water from these sources, whether direct or indirect, significantly impair efforts for restoration and recovery.

Such an Alternative would provide a significant opportunity for the SCWA (the region's largest wholesale water supplier, Russian River Project owner and manager, NBWRA member, and Project sponsor) and other NBWRA members to meet the Project goals and reduce its environmental impacts. A full evaluation of alternatives will further the goals of CEQA and NEPA to ensure protection of the environment.

> *The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal . . . . The lead agency may determine an environmentally superior alternative is more desirable or [that] mitigation measures must be adopted. Environmentally superior alternatives must be examined whether or not they would impede to some degree the attainment of project objectives.*
> (Kings County Farm Bureau v. City of Hanford, (1990) Cal.App.3d 692, 735-737.)

FOER has consistently requested that the Project's Objectives be redefined and clarified to meet the needs of protecting the Eel and Russian Rivers and SR Groundwater, as the primary sources of water that becomes the treated wastewater produced by NBWRA member agencies and districts. We have strongly advocated that the Project's Objectives be more carefully defined to include language such as the following:

- The first and highest priority objective for the use of recycled water shall be to maximize the offset of potable water demands within the local agencies' urban service area, prior to any export of recycled water in excess of local needs. (This is consistent with the recently amended NBWRA MOU language.)
- Improve regional cooperation and planning consistent with approved land use plans and zoning.
- Incorporate and promote Best Management Practices ("BMPs") for water and energy efficiency and minimize Greenhouse Gas ("GHG") emissions associated with the Project.

- Outside of urban service areas of each local agency, the priority for use of recycled water shall be for agricultural use.
- Local storage of recycled water destined for agricultural users shall be constructed at the expense of the beneficiaries, not through public subsidies.

A fourth Alternative should also be incorporating these principles and objectives to produce a project that is far superior environmentally than the current Project's mid-20th Century concept and design for a "pump and pipe water distribution project." The current Project's three Alternatives are unfortunately based on both a limited engineering objective and vision of what can be accomplished, ignorance of GHG emission and climate change issues and impacts to the source waters, as well as based on the perceived political and project funding needs to create a large - and larger, and largest - water reuse project that Project sponsors believe meets the institutional goals of USBR's Title XVI funding requirements.

There are apparently significant political inducements to create larger project sizing, with more potential irrigation customers, to qualify for federal and state funding priorities. However, this institutional funding and approval bias should not be used as impediments to a more sustainable project design. A Fourth Alternative must address and overcome these shortcomings and barriers.

The EIS/ EIR must also describe the possible governance, financial and administrative alternatives for the Project, so that the public can assess accountability and potential environmental and economic impacts of any particular structure proposed to be used.

Environmental Impacts of the Project:

The NOP recites in general terms the areas of environmental impacts that will be reviewed in the EIR/ EIS. FOER requests that the EIR/ EIS provide a detailed analysis of all of the potentially significant environmental impacts of the Project, and all feasible mitigation measures and alternatives. In order for the EIR/ EIS to serve its purpose as an informational document, it is essential that the EIR/ EIS not understate the severity or extent of the impacts associated with the proposed Project.

To provide an accurate view of the impacts of the proposed Project, the EIR/ EIS should, at a minimum, evaluate current and future, direct and indirect and cumulative impacts from the incremental impacts of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Future projects need not be certain to occur to be considered in the cumulative impacts analysis; the key is that they appear foreseeable at the time of the EIR/EIS preparation. The EIS/ EIR must demonstrate reasonable efforts to discover, disclose and discuss past, present and future projects including those under review by other agencies.

This would include an evaluation of cumulative impacts resulting from the implementation of the Project, including future demands for water use or diversions, and limitations on water diversions and minimum streamflows required for the Eel and Russian Rivers.

- Impacts to the source waters used in the Project: Eel River, Russian River, SR Groundwater, State Water Project, Milliken-Sarco-Tulucay Creeks (MST), and other sources of potable water that become inflows to the wastewater-generating agencies of NBWRA. This includes impacts to the devastated salmon and steelhead fisheries, and other adverse impacts to the riparian systems.

- Impacts to the Eel River and the Russian River, associated with continued diversions of water from the Eel River, including maintenance of Lake Mendocino and Lake Sonoma water supply storage levels, SWRCB D.1610 minimum instream flows in the Russian River, and FERC requirements for flows through the Potter Valley Project.

-
- Address cumulative impacts and new information relevant to the impacts of the Project, including:
- any proposals for increased diversions from the Russian River system and Lake Sonoma anticipated in SCWA's Water Supply, Transmission and Reliability Project ("WSTRP"), the 11th Amended Agreement for Water Supply and the MOU Regarding Water Transmission System Capacity Allocation During Temporary Impairment;
- anticipated changes in D.1610;
- anticipated changes in FERC flow requirements and relicensing of the Potter Valley Project;
- listing of the Russian and Eel Rivers on the 303(d) list of impaired waterways;
- listings of several species of salmonid as threatened or endangered under the federal Endangered Species Act;
- proposed transfers and uses of treated wastewater in SCWA's North Sonoma County Agricultural Reuse Program;
- proposed transfers and uses of treated wastewater in Santa Rosa's Urban Water Reuse Program (both proposed USBR Title XVI programs);
- proposals in the Sonoma County Aggregate Resource Management Plan ("ARM Plan") to continue, reduce or eliminate the mining of the gravel and sand aquifer and terraces of the Russian River which affect water storage capacity of the aquifer;
- proposed changes or increases in water rights and diversions from Lake Mendocino by various water districts, including the Mendocino County Russian River Flood Control and Water Conservation Improvement District or the Redwood Valley County Water District or other Russian River water districts or entities;

- current proposals for implementation of AB2121 by the State Water Resources Control Board ("SWRCB") as it would affect water diversions and permits in the Russian River and other regional watersheds
- Direction to SCWA by the SWRCB to detail a plan of water conservation efforts that will offset future increases in demand, which in turn will result in no increase in Russian River diversions (Feb. 2, 2005)
- Watershed Management for Potable Water Supply program, operated and financed by the City of New York to protect its watershed for long term health and sustainability.
-
- Negative economic impacts in the Eel River Basin associated with continued diversions of almost all of the Eel River's summer flows which also have adverse physical impacts, including changes in development patterns, blight, increased growth and development in Sonoma, Marin, Napa and Solano Counties, and increased pressure for development of other extractive industries, such as timber harvesting and gravel mining

- Impacts of the Project's Alternatives, currently and over the Project's lifespan, as they may increase or limit or reduce current and future availability and demands for water diverted from the source waters through SCWA and other water production facilities.

- Impacts of the Project's alternatives that will increase, reduce or induce changes in potable water demands of the water districts, cities and agencies (San Rafael/ Marin Municipal Water District ["MMWD"], Novato/ North Marin Water District ["NMWD"], City of Sonoma, City of Napa) that supply potable water that becomes the wastewater inflows to NBWRA members, at start of Project, in 15 years, and at end of Project's lifespan.

- Impacts of long term needs by existing water consumers and supplying agencies for recycling and reuse within the Russian and Eel Rivers and SR Groundwater supply areas to offset current and future potable water demands, that may become competition for recycled water with NBWRA recycled water customers. The Project takes water that is currently available for offsets, and pumps it eastward to provide supplemental water primarily for vineyards which have overdrafted their local groundwater and surface water supplies.

- Impacts of increasing demands for water to remain in the Russian River, Eel River and SR Groundwater, versus Project needs for increasing export of water to irrigation customers. The Project will lock in future demands for diversions and pumping to supply NBWRA agricultural customers; Impacts of future demand increases and potential conflicts for reuse of treated wastewater within the Russian and Eel Rivers, SR Groundwater, State Water Project, MST creek areas, etc, versus increasing demands for recycled water in the Sonoma and Napa Valleys to offset local water overdrafting and salination of groundwater.
-

- Evaluate what changes in vineyard practices may be necessary to reduce agricultural demands for water and recycled water, or shifts to crops suitable to be in balance with the actual local water availability without the Project.

-
- Address the impacts of providing NBWRA recycled water derived from the Russian and Eel Rivers and SR Groundwater, which go primarily to users in Southern Sonoma and Napa Valleys in comparison with maximizing the reuse within the source watersheds; local groundwater and surface waters have been overdrafted (Sonoma and Napa Valleys, SMT creeks) and increased saline intrusion in the lower Valleys.
-
- The federal Title XVI legislation (S1472, HR236) allows Project expansion into Solano Co as well – clarification is necessary to address the Project's potential in Solano County, including the option of amending the legislation to eliminate this expansion capability or legislation amendment required. What would this Project's expansion into Solano County encompass?
-
- Identify all sources and quantities of water to be used in the NBWRA Project, including the percentage of Russian River Project (SCWA) water delivered thru the NBWRA Project to intended users.
-
- Identify the volume, duration, seasonality and percentage of Russian River Project (SCWA) water delivered to Napa-Sonoma Salt Marsh Restoration Project thru the NBWRA project. Compare this with the water to be delivered through the Corps of Engineers/Coastal Conservancy Napa Salt Marsh Restoration Project. Identify the relationships (engineering, financial, fiscal, management; operating authority, objectives) between NBWRA and the CoE/Coastal Conservancy Napa Salt Marsh Restoration Projects.
-
- Impacts for expanded recycled water service or potable water service east of Napa Valley, including Solano County? (currently allowed in the federal legislation's enabling language in S.1472 and HR236)
-
- Impacts of potential expansion or extension of the North Bay Aqueduct, or other State Water Project or Sacramento River or Delta aqueducts or other East Bay sources or users, to tie or connect with the Project.
-
- Impacts of irrigation of lands currently used by Infineon Raceway, Port Sonoma, and other agricultural or non-agricultural lands along the San Pablo Bay front. Sonoma County adopted policy currently prohibit use of recycled water to irrigate lands southward of Highway 37. Address impacts of potential for induced growth as a result of supplying water to currently water-scarce non-developed, non-agricultural, or fallow lands.
-

- Impacts of emerging toxics and other wastewater contaminants; identify contaminants, their concentrations and TMDLs; sources and potential source reductions. Include chlorination byproducts; pharmaceuticals, personal health care products; hormone disruptors; estrogenics; pesticides, herbicides, fungicides, insecticides; MTBE; MSRA and other emerging antibiotic resistant organisms.

- Impacts of contaminants in recycled wastewater on local groundwater and surface water; impacts on targeted food crops (grapes) and food production (wine)

- Impacts of distribution of treated wastewater on organic growers, residential neighbors; address suitability of soils in the receiving areas for use of treated wastewater; address impacts of runoff of treated wastewater to surface waters and groundwater.

- Impacts of use of treated wastewater on the regional, national and international market for world-class wine production in Sonoma and Napa Valley wineries and vineyards. Financial impacts to sales in the world market will have direct and indirect physical impacts on the financial success of vineyards, and thus direct and indirect impacts on their viability as agricultural enterprises. There are key international market sectors that prohibit the use of treated wastewater for grapes (including regions in France, Germany and Italy, including Bordeaux for instance) no less any irrigation of grapes. Grape growers in Dry Creek Valley recently refused application of treated wastewater for irrigation and frost protection based on world market impacts to them.

- Identify enforceable Best Management Practices to be required for Project irrigation water recipients, and specific enforceable objectives for reducing water and energy demands. Address the impacts of various alternative BMPs, or failure to adopt and enforce them.

- Define "tertiary treatment standards" to be used for levels of treatment for wastewater produced by the participating agencies. What standards are in place now, and what are anticipated by the start of the Project, and by the end of the Project's lifespan? Identify the impacts of these alternatives. What contaminants, at what level of concentration, during wet and dry weather conditions are expected of the WWTPs? What are the price and cost impacts of various levels of treatment?

- Identify Average and Peak Wet Weather lows for each wastewater treatment plant ("WWTP") for each agency of NBWRA, and discharges to receiving waters currently, in 15 years, at end of lifespan of the project. Identify and address impacts of improvements and repairs to the WWTPs, including reduction of inflows as a result of planned or required Inflow and Infiltration repairs and reductions. Address impacts of I&I improvements on the NBWRA discharge requirements and available recycled water for the Project, including financial

impacts that would alter the inducements or impediments to reduce inflows with decreased or increased availability and sales of recycled water.

-

- Impacts of current Project proposals which include 5,000-11,000hp of new electrical usage for pumping (main trunk lines), plus unquantified additional hp for distribution. Identify sources and impacts of energy and impacts on current generation and electrical distribution capacity.

-

- Impacts of GHG generation. Specify GHG emissions of each Alternative, and proposed alternatives or mitigations to reduce GHG emissions. Identify how NBWRA will meet Sonoma County, City of Sonoma and other adopted objectives for a 25% reduction in GHG emissions by 2015 below 1990 levels? Identify how NBWRA will meet SCWA's public policy commitment to be 'carbon neutral' by 2015?

- Impacts and availability of alternative sources of water for irrigation to the region or inclusion in the recycled water supply for the Project, including the discharges originating in the City of Vallejo (currently discharging 12-60,000 af/yr of secondary treated wastewater to San Pablo Bay and the Carquinez Straits).

- Proposals and impacts of local or regional storage of water for local use. How much storage is needed for irrigation? Frost protection? What are the alternatives for wet, average and dry rainfall years? What is the seasonal demands model? Where would storage be located? Who pays for the storage and supply distribution pipelines and pumps? Where is the plan for this? Address impacts of the cumulative, fully built out alternatives.

- Address impacts of the current practices of drainage of vineyard fields in southern Sonoma and Napa Valleys during the winter (wet) season, where soils are drained to prevent saturation of root zones for irrigated grape rootstock. Address current practices, including volumes drained and timing for fields drained, compared with rainfall and runoff availability. Address impacts of draining fields during the wet seasons in these regions, such that rainwater is not available for groundwater replenishment and storage. Address impacts of field drainage on saline intrusion.

- Address impacts of competing uses of treated wastewater for vineyard irrigation vs. needs for hay production for local dairies; impacts on the necessity for assistance in hay crop production for dairies, impacts on greenbelts and viability of regional dairies; potential losses to greenbelts and dairy industry viability and infrastructure (creameries, feed mills, labs, trucking, labs, etc)

- Address interaction between financial and social impacts of the Project with the ability to provide for future water and energy efficiencies upstream (ie, SCWA water contractors and SCWA's operations).

- Evaluate the 'ecological footprint' for Project over project's lifespan.

- Identify impacts and ways to reduce the through-put of water and loads to participating NBWRA WWTPs, to reduce demands for a large Project for distribution of discharged wastewaters. Although Sanitary Districts do not directly control water uses, 1) SCWA is a member of NBWRA, and is the primary supplier of potable water, and thus sets supply costs and distribution policies for contracting water agencies/districts 2) Sanitary Districts members of NBWRA set rates to users, and can set tiered rates and implement other policies to discourage and reduce wastewater production and reduction of organic and inorganic loads. Reduction of wastewater volumes is a critical key ingredient in creating a long-term sustainable and economically viable Project that will provide maximum protection and restoration for the environment.

- Address impacts and methods to show how this Project can and will remove market barriers to saving water and energy in indoor uses (residential, commercial, industrial and institutional) upstream of the WWTPs, to reduce throughput.

- The Project as now proposed provides significant disincentives for potable water demand reductions in the source waters and water agencies that supply water to customers. Address the comparative impacts of providing incentives for maximizing reuse of water to offset local potable water demands. It is difficult for local water districts to incentivize local reuse (purple plumbing, urban landscape irrigation, etc) when there is a new set of paying customers depending on consistent or increasing flows and availability of treated wastewater for agricultural irrigation outside the urban service areas of the local water agencies.

- How will Project and participating agencies reduce GHG emissions, energy usage, water usage, chemical usage and water throughput over the life of the Project? Identify options and quantify projections over time.

The NBWRA Project EIS/EIR must provide an "Alternative 4" – the Sustainability and Efficiency Alternative, an integrated, regional program that will reduce demands on the source waters, reduce wastewater throughput, reduce discharge volumes, improve efficiencies in water and wastewater usage and encourage restoration of the Russian and Eel Rivers. At a time when water is critically overdrafted in the source waters and throughout the arid West, fisheries are severely impacted, and the trend for water demands on the sources (both legal, permitted, and illegal, unpermitted) is increasing, the Project must be redesigned to provide for increasing amounts of water to be left in the source waters. Alternatives 1,2, and 3 do not meet the needs of the 21st Century in N. Calif and the arid West, and are ill-designed for future global and regional changes in climate and water supplies.

FOER appreciates the opportunity to comment on the NOP. Inasmuch as the NOP contains only general information for the evaluation of the Project's potential environmental impacts, the issues identified in this letter are not intended to be exhaustive. FOER reserves its right to raise other issues during the environmental review process. Please send FOER a copy of the Draft EIR/ EIS when it becomes available.

Sincerely,

David Keller
Bay Area Director
Friends of the Eel River

cc: Nadananda, FOER, Redway, CA
Ellison Folk, Shute, Mihaly & Weinberger LLP

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
Sent: Sunday, August 24, 2008 12:23 AM
To: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 24, 2008, 12:22 am.

Comments:

Thank you for considering the following comments on behalf of GULP.

GULP (Groundwater Under Local Protection) is a community organization of residents and property owners in the Miliken-Sarco-Tulucay (MST) Creek Groundwater Basin in Napa County . GULP has been working with Napa County to develop a solution to the groundwater depletion problem in the MST area. While we generally support the use of recycled water, and believe that recycled water could be a substantial portion of the solution to the MST groundwater depletion problem, many questions remain unanswered. These questions must be addressed by the EIS/R to allow for an appropriate assessment of the environmental impacts potentially associated with delivery of up to 2,000 acre-feet/year (afy) of recycled water, or more. The first 2 of 9 of our specific comments are provided below:

1. MST Project
The EIS/R should evaluate meaningful alternatives as part of the project-level analysis of the proposed recycled water distribution pipeline for the MST. This should include the no project alternative as well as one or more intermediate alternatives delivering smaller quantities of water, as well as an alternative delivering a greater amount of water to an expanded service area (if there is sufficient recycled water available to potentially deliver water to the restoration project, use of that water in the MST should also be considered). Absent an adequate range of alternatives, a true assessment of the environmentally superior/preferred alternative cannot be made. GULP is available to help develop meaningful alternatives.

2. Nutrients and Salts in Recycled Water and Effects on Agriculture The EIS/R should provide a detailed description of the levels of nutrients and salts that can be expected to be present in the recycled water (by specific source/County if there are differences), and their effects on premium wine grapes. The impact analysis should consider both irrigation and frost protection use, and should reflect the results of the long-term study of Napa County's Cooperative Extension Office (study performed by Ed Weber, data available from Mike Anderson, Viticulture Expert, Napa County Cooperative Extension 707-253-4221), as well as Sonoma County's experience with recycled water use on wine grapes.

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
Sent: Sunday, August 24, 2008 12:30 AM
To: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 24, 2008, 12:30 am.

Comments:

Thank you for considering the following comments on behalf of GULP.

GULP (Groundwater Under Local Protection) is a community organization of residents and property owners in the Miliken-Sarco-Tulucay (MST) Creek Groundwater Basin in Napa County . GULP has been working with Napa County to develop a solution to the groundwater depletion problem in the MST area. While we generally support the use of recycled water, and believe that recycled water could be a substantial portion of the solution to the MST groundwater depletion problem, many questions remain unanswered. These questions must be addressed by the EIS/R to allow for an appropriate assessment of the environmental impacts potentially associated with delivery of up to 2,000 acre-feet/year (afy) of recycled water, or more. Comments 3 and 4 of 9 of our specific comments are provided below.

3. Microconstituents in Recycled Water
The EIS/R should present available data on the effects of microconstituents, such as pharmaceuticals and flame retardant chemicals, on agricultural production, and other potential water users. The EIS/R should describe in detail the likelihood of groundwater and surface water contamination from these constituents. The analysis should include an assessment of the likely rate of vertical transport reflecting fate and transport consideration such as adsorption, biodegradation (if any), etc. Similarly, the assessment should include an assessment of the likely volume of direct (recycled water) and indirect (stormwater containing soil exposed to recycled water) run-off associated with recycled water. Modeling of potential impacts/releases is preferred.

4. Greenhouse Gas Emissions
Please provide an assessment of the GHG emissions with and without the project (at both the programmatic and project-specific level). What is the net carbon impact of delivering and tertiary treating the proposed volume of recycled water, and how does that compare to the GHG emissions associated with current practices?

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
Sent: Sunday, August 24, 2008 12:37 AM
To: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 24, 2008, 12:36 am.

Comments:

Thank you for considering the following comments on behalf of GULP.

GULP (Groundwater Under Local Protection) is a community organization of residents and property owners in the Miliken-Sarco-Tulucay (MST) Creek Groundwater Basin in Napa County . GULP has been working with Napa County to develop a solution to the groundwater depletion problem in the MST area. While we generally support the use of recycled water, and believe that recycled water could be a substantial portion of the solution to the MST groundwater depletion problem, many questions remain unanswered. These questions must be addressed by the EIS/R to allow for an appropriate assessment of the environmental impacts potentially associated with delivery of up to 2,000 acre-feet/year (afy) of recycled water, or more. Comments 5 and 6 of 9 of our specific comments are provided below.

5. Growth-Inducing Impacts
How much added growth is projected as a result of the proposed program, and as the result of the specific individual projects included in the program? Please distinguish between agricultural, commercial/industrial, and residential growth, and provide appropriate 'feasible, implementable) mitigation measure to address excess growth.

6. Regulatory Environment
Please provide a detailed analysis of the following regulatory issues potentially affecting the project:
a. Inter-basin and inter-watershed water transfers
b. Water rights relative to each County's ability to regulate groundwater and surface withdrawals. (Absent the ability to regulate such withdrawals, this program would clearly have growth-inducing impacts, as users would simply be enabled to increase the irrigated acreage.)
c. Beneficial reuse requirements for POTWs (for both the baseline and future analysis years, so that the no project/no action alternative accurately reflects the likely conditions in the out years)

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
ent: Sunday, August 24, 2008 12:37 AM
o: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 24, 2008, 12:36 am.

Comments:

Thank you for considering the following comments on behalf of GULP.

GULP (Groundwater Under Local Protection) is a community organization of residents and property owners in the Miliken-Sarco-Tulucay (MST) Creek Groundwater Basin in Napa County . GULP has been working with Napa County to develop a solution to the groundwater depletion problem in the MST area. While we generally support the use of recycled water, and believe that recycled water could be a substantial portion of the solution to the MST groundwater depletion problem, many questions remain unanswered. These questions must be addressed by the EIS/R to allow for an appropriate assessment of the environmental impacts potentially associated with delivery of up to 2,000 acre-feet/year (afy) of recycled water, or more. Comments 5 and 6 of 9 of our specific comments are provided below.

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a. Inter-basin and inter-watershed water transfers
b. Water rights relative to each County's ability to regulate groundwater and surface withdrawals. (Absent the ability to regulate such withdrawals, this program would clearly have growth-inducing impacts, as users would simply be enabled to increase the irrigated acreage.)
c. Beneficial reuse requirements for POTWs (for both the baseline and future analysis years, so that the no project/no action alternative accurately reflects the likely conditions in the out years)

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
ent: Sunday, August 24, 2008 12:48 AM
o: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 24, 2008, 12:47 am.

Comments:

Thank you for considering the following comments on behalf of GULP.

GULP (Groundwater Under Local Protection) is a community organization of residents and property owners in the Miliken-Sarco-Tulucay (MST) Creek Groundwater Basin in Napa County . GULP has been working with Napa County to develop a solution to the groundwater depletion problem in the MST area. While we generally support the use of recycled water, and believe that recycled water could be a substantial portion of the solution to the MST groundwater depletion problem, many questions remain unanswered. These questions must be addressed by the EIS/R to allow for an appropriate assessment of the environmental impacts potentially associated with delivery of up to 2,000 acre-feet/year (afy) of recycled water, or more. Comments 7,8 and 9 of 9 of our specific comments are provided below:

7. Water Use by Segment
Please provide a description of the approximate water use by user segment (residential, agricultural, commercial/industrial) for the program area and for each project analyzed. This information is required to assess the effectiveness of various alternatives.

. Temperature Profile of Recycled Water Wine grapes are sensitive to the temperature of irrigation water. Please provide data on the typical annual temperature profile of the recycled water, by County/source.

9. Potential Future Increases in Recycled Water Availability Please describe the limitations inherent in reusing all available recycled water. The most complete alternative still envision discharge of nearly 10,000 afy of water. Are there limitations to treatment capacity, and if so, what are the limitations? Are there limitations to effective reuse, and if so, what are the limitations?

Jim O'Toole

From: Marc Bautista [Marc.Bautista@scwa.ca.gov]
Sent: Sunday, August 24, 2008 4:23 PM
To: Jim O'Toole
Subject: FW: Scoping comments, North Bay Water Use Program

-----Original Message-----
From: Bill and Lucy Kortum [mailto:blkortum@sbcglobal.net]
Sent: Sun 8/24/2008 10:49 AM
To: Marc Bautista
Subject: Scoping comments, North Bay Water Use Program

To: Marc Bautista, Environmental Specialist

Please consider the present and future application of wastewater as to demand for tertiary treatment or secondary treatment.

Lesson learned from Geyser project was demand for constant delivery despite season of year. Demand required agriculture to cut back acreage because Geyser project used water during high summer irrigation requirements.

Analyze crops to be irrigated. Half-acre foot annually for grapes, three acre feet for forage crops/pasture. Irrigated pasture and forage crop usage closer to source of wastewater will save pumping costs.

Agricultural irrigation requires maximum summertime flows, usually beyond the summertime discharge capacity of sewer plants. Urban reuse also has heaviest use in summer.

Summer irrigation requires off-season storage. Study should consider cost of off-season storage.

Study should determine availability of remaining sites for off-season storage, cost of piping to storage facilities, neighborhood resistance to off-season storage.

Sonoma County agriculture was prepared to take all wastewater from

Santa Rosa regional plant and Petaluma plant over and above wintertime discharge to Russian and Petaluma rivers. Cost of storage limited the proposed use. Can proposed project meet the cost of necessary storage?

Justify sending wastewater originating in Sonoma County cities to another county when agriculture could use the water in Sonoma County, possibly keeping the dairy industry environmentally feasible in the county.

Study the resistance of North County grape growers to utilizing Santa Rosa wastewater.

Consider the economic differences between dairy, grape, and Geyser operations and the future competition, both political and economic, as to who will have a priority to use the water.M

Jim O'Toole

From: NBWRA WEBSITE [noreply@nbwra.org]
Sent: Monday, August 25, 2008 2:23 PM
To: martin@rauchcc.com; marc.bautista@scwa.ca.gov; Jim O'Toole
Subject: New Notice of Preparation Comment Posted from NBWRA.ORG

A new Notice of Preparation visitor comment has been recorded from the www.nbwra.org website on August 25, 2008, 2:23 pm.

Comments:

On page 2 of NOP, there is the following statement:

"The proposed Project would increase the beneficial use of recycled water in the North Bay Region by reusing water that would otherwise be discharged into San Pablo Bay and its tributaries to provide increased recycled water supply to agricultural, urban, and environmental uses."

The proposed use of tertiary recycled water at the Napa Salt Marsh involves discharge into San Pablo Bay, so it may not be accurate to characterize this as other than a shallow-water discharge.

On page 4 of NOP, there is the following statement:

"LGVSD tertiary treatment capacity would be increased by 0.3 mgd through onsite improvements at the LGVSD treatment plant."

This statement could be misconstrued that the LGVSD facility currently has tertiary treatment; it does not. The facility is owned and operated by the Marin Municipal Water District. A more accurate statement would be: "A 0.3 mgd tertiary treatment facility would be constructed through onsite improvements at the LGVSD treatment plant."

The suggestion that there is existing tertiary treatment at the facility is reiterated again on Page 13/14 of the NOP.

Tom Yarish
23 Nelson Ave, Mill Valley, CA 94941
415.381.6970 voice / 415.381.5521 fax

8/24/2008

Marc Bautista
Sonoma County Water Agency
PO Box 11628
Santa Rosa, CA 95406-1628

Re: NBWRA DEIR comments

Dear Mr. Bautista,

I am submitting these comments on the NBWRA DEIR on my own behalf and on behalf of Friends of the Esteros and the Salmon Protection and Watershed Network (SPAWN).

These comments largely reiterate comments made by myself and many others at recent public and private meetings held by either NBWRA or SCWA, and as such should already be a matter of record.

The overriding issue of concern is that none of the alternatives described in program/project documents address the critical need for advanced conservation and water source protections within the source watersheds, most notably the Eel River and Russian River watersheds. In many ways the Russian River is already overburdened by a vast number of unpermitted appropriations of potable water and unpermitted point and non-point source discharges of contaminated water. This is the status quo, and there is little in the DEIR to redress these issues.

In fact, the DEIR may be seen as an attempt to justify the current level of degradation of the Russian River by establishing long-term needs for the wastewater generated by Russian River source water users, notably the constituent member agencies of the NBWRA. These alternatives, I believe, violate long-standing but never-observed provisions in the California Water Code or similar statutes that prohibit the export of water from any California watershed. In this DEIR, users outside the Russian River and Eel River watersheds are given explicit priority over more critical uses in Sonoma County and within the Russian River watershed.

It is a primary responsibility of the SCWA to protect the natural resources used to derive its potable supplies. In many cases this responsibility conflicts with the ambitions of the SCWA and its contractor agencies to increase appropriations not only from the Russian River but also the contiguous aquifers, tributaries and basins that are part of the Russian River basin aquifers and recharge areas. Hence, the public interest mandates that higher levels of local and agency conservation be implemented prior to any exports of potable and reclaimed wastewater outside of the boundaries of the SCWA and its contracting agencies.

Another realm of issues weighs heavily upon this DEIR and its proponents. At current treatment levels wastewater products from any of the NBWRA member agencies contain a large number of contaminants and toxic compounds that remain a serious issue for soil and wildlife. As demonstrated in the Santa Rosa sub-regional treatment plant discharge project EIRs, even high-levels of tertiary treatment do not produce water that is categorically safe for discharge into waterways. Worse, advances in toxicology and water quality standards point to increasingly difficult and expensive treatment modalities and techniques that will be required to treat discharged wastewater, reverse osmosis (RO) and microfiltration (MF), notably.

While various member agencies may produce varying degrees of treatment, the blending of these waters mandates a very high standard for all sources. At a minimum the DEIR must consider the long-term costs of energy for pumping and treatment and it must analyze these costs against the lost opportunity costs of advanced conservation and local reuse by each agency. If each agency will be required to treat to RO and MF standards then there is no reason the reclaimed water should not be used locally by each agency to offset potable demand within each jurisdiction and service area.

Given the projected increasing costs of energy, advanced treatment and capital projects I seriously doubt that a regional wastewater distribution system such as proposed could provide any net benefit to the public, taxpayers, water consumers or the agencies themselves, not to mention so-called environmental improvement or mitigation projects. In any event, the EIR cannot be considered adequate until these factors are thoroughly examined.

So far as I can see, the only potential beneficiaries from the exportation of wastewater are a relative few private landowners in agriculture and the agencies themselves which may hope to augment their funding and authority through sales and wheeling of wastewater to distant points.

Given the uncertainties presented by energy costs, long-term climate change, extended drought and related dislocations in Sonoma County and Napa County grape agriculture, future needs justifications for regional wastewater distribution are tenuous at best. In fact, these resources are critical for the preservation of natural resources in their watersheds of origin.

Sincerely,

Tom Yarish

NORTH BAY WATER REUSE AUTHORITY

Comments about Scope of the Authority's Forthcoming EIR/EIS

Edwin Orrett • 24 August 2008

The proposed projects are advanced to promote sustainability and environmental enhancement at a regional level:

> NORTH BAY WATER REUSE AUTHORITY
>
> *A cooperative multi-agency program that promotes sustainability and environmental enhancement in the North San Pablo Bay region by expanding use of recycled water.*

The alternative projects proposed are intended to increase the volume of highly treated municipal wastewater produced and used in the North Bay, thereby to reduce detrimental water-related environmental impacts on natural sources and sinks.

The enhancement of sustainability, however, entails performance across a broad array of metrics that encompass environmental, economic, and social issues. While the proposed project purports to address water issues within the environmental domain by reducing total throughput (and reducing wastewater discharge to the shallow waters of San Pablo Bay), potential effects upon greenhouse gas emissions and overall cost appear to deserve greater attention. In fact, a new programmatic approach may be warranted such that the overall project can be configured to enhance sustainability comprehensively.

SUSTAINABILITY

Sustainability arises as a concept at the level of the entire planet. One metric has been created that describes the overall performance of the global human economy with respect to its impact on the health of life on earth: the Ecological Footprint. The most recent value calculated for this indicates the global human economy is in "overshoot." As explained by the Ecological Footprint Network, "It now takes the Earth one year and three months to regenerate what we use in a year."[1]

The degree of overshoot is generally greater than the world average for industrial economies; and is particularly so for the United States, where average global biocapacity is exceeded by nearly fivefold on a per capita basis (2003 data).[2] The largest segment of the US ecological footprint is that related to carbon emissions (59% of the total). This data indicates two important considerations from the environmental perspective for NBWRA to fulfill its sustainability objective:

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[1] http://www.footprintnetwork.org/gfn_sub.php?content=whatwedo (click on "Ecological Footprint;' quote from first page of document that opens.

[2] Data available at: http://www.footprintnetwork.org/gfn_sub.php?content=national_footprints

- The project should contribute to reducing the region's ecological footprint; and
- To accomplish the above, special care should be taken to ensure the project provides a *net reduction* in carbon emissions.

The overall economic and social impacts of the project are also important from the standpoint of sustainability. Who will benefit and who will pay? Will overall costs related to water increase or decrease over time?

SCOPE

The project is worth celebrating for being advanced within the context of sustainability: certainly, our ability to learn how to design projects to perform within this context is the work of our time. Given the cost and impacts of this project as presently conceived, additional time given to adjusting its design is warranted so it may become a model for responding to the challenge of sustainability. Greenhouse gas emissions and overall cost may be the most important factors to attend to in forthcoming design work.

The recently developed Charter for the County of Sonoma's Regional Climate Protection Coordination Plan, with which the Sonoma County Water Agency is a participant, recommends pursuing a multi jurisdictional, collaborative, holistic, and regional approach. Although the NBWRA proposal reflects some of this, its multi jurisdictional quality is mostly across a single dimension (wastewater agencies), and thus lacks the full advantage of a holistic design. In particular, its solution set does not include water efficiency upstream of the proposed participating wastewater plants – surely steps whose sustainability metrics will outperform wastewater reuse. Non use of a resource is always preferable to using (and recycling it), especially when non use is the result of improved efficiency so that no sacrifice is involved.

A recent study of greenhouse gas emissions associated with Santa Rosa's municipal water cycle tracked energy-related emissions from the point water is withdrawn from nature to its eventual discharge either to nature or the Geysers pipeline.[3] It was determined that 3% of the total greenhouse gas emissions are associated with water supply, 10% with wastewater management, and the remaining 87% are on the customer's side of the meter (mostly due to energy used by residential water heaters). Furthermore, it identified an implementation system that will remove most of the market barriers to cost-effective water efficiency measures. This will enable large savings of water and related energy use at positive cash flow for participants. Furthermore, the cost to utilities to support cost-effective efficiency measures becomes minimal after the market barriers are removed.

[3] *Greenhouse Gas Emissions Related to Water and Wastewater Services: Baseline, Reduction Strategies, and Recommendations*, Climate Protection Campaign: June 2008

The relevance to the NBWRA project is that indoor water use – the source of "supply" for wastewater agencies (along with infiltration and inflow) – is the most expensive water for upstream users. This is because customers incur water and wastewater costs for all indoor water, and also energy costs for water that is heated. Much of this volume – perhaps 40 percent for the average residence – can be saved cost-effectively at today's rates (via 1 gpf toilets, leak repair, aerators and showerheads, clothes washers, and technology to improve the efficiency of the hot water system itself). The fraction of water that is cost-effective to save may also increase after reclamation infrastructure is added, for the latter generally has a positive cost (vs. the negative cost of the right mix of water efficiency measures). Alternatively, if the volume of wastewater influent to wastewater plants is reduced, less reclamation infrastructure may suffice to meet program needs (e.g., reduction of volume of water discharged to San Pablo Bay), thereby reducing costs relative to those otherwise required to achieve the same result.

RECOMMENDATION

Explore integrating high performance indoor water efficiency (offered with a next-generation implementation system) with reclamation. This is a powerful method for more than offsetting reclamation-related GHG emissions while also reducing costs.

APPENDIX 1A
Scoping Report

ESA

1425 N. McDowell Boulevard
Suite 105
Petaluma, CA 94954
707.795.0900 phone
707.795.0902 fax

www.esassoc.com

memorandum

date September 28, 2008

to NBWRA Staff; Bureau of Reclamation

from ESA

subject Scoping Report - NBWRA North Bay Water Recycling Program

This Scoping Report has been prepared to summarize the scoping process completed for the NBWRA North Bay Water Recycling Program EIR/EIS. It provides an overview of the scoping process completed for both NEPA and CEQA, as well as a summary of comments received during the scoping process.

1.0 NEPA Scoping Process

A Notice of Intent was published in the Federal Register by the NEPA Lead Agency, the Bureau of Reclamation, on July 28, 2008. This established a 30-day public review period. During the public review period, NBWRA held three local scoping meetings, which are described under the CEQA Process below. No written comments were received by the Bureau during the Notice of Intent public review period, which closed on August 28, 2008.

2.0 CEQA Scoping Process

A Notice of Preparation (NOP) was circulated on NBWRA letterhead on July 25, 2008. The NOP identified Sonoma County Water Agency as the CEQA Lead Agency, and established a 30-day public review period, which ended August 25, 2008. The NOP was mailed to the State Clearinghouse, and was posted to the NBWRA website. The NOP was directly mailed to 63 parties, and a postcard notification of the NOP's availability was sent to 580 parties.

NBWRA held publically noticed scoping meetings on August 4, 5, and 6 at the locations identified below.

August 4, 2008 6:30 p.m. – 7:30 p.m. Napa Elks Lodge 2804 Soscol Avenue, Napa	August 5, 2008 6:30 p.m. – 7:30 p.m. Margaret Todd Senior Center 1560 Hill Road, Novato	August 6, 2008 6:30 p.m. – 7:30 p.m. Sonoma Community Center 276 East Napa Street, Sonoma

Additional scoping meetings with individual stakeholders were held on August 6, 2008 with the Russian River and Eel River Interest Groups, and on July 27, 2008 with California Department of Parks and Recreation (staff meeting).

3.0 Comment Summary

A total of 12 comment submittals (letters, webpage, emails) were received. **Table 1** provides a summary of the written comments received during the public scoping process, including identification of the commenter, affiliation, date and comment format, and summary of comments provided. **Table 2** provides a summary of verbal comments received during the scoping meetings. Please note that some of these verbal comments were received in question/answer format, and are provided to allow NBWRA review of discussions at the scoping meetings. Collectively, a total of 172 individual comments were received.

3.1 Major Issues Identified in Comments Received

An overview of the major issues and sub-issues identified during the NOP/NOI scoping period is provided below. The number of comments relating to each issue is provided in parentheses.

Water Quality Impacts (13)

- Impacts to Agriculture/Viticulture (3)
- Impacts to Environment (2)
- Impacts to Napa Salt Marsh/San Pablo Bay (3)
- Impacts relating to Micro-constituents (5)

Conservation and Source Water Protection (25)

- Inclusion of conservation as a key element of protecting "source waters" (22)
- Urban Reuse should be the focus of project (3)

Range of Alternatives (9)

- Request for additional "sustainable" alternative addressing conservation and sustainable practices.

Carbon Footprint/Greenhouse Gases/AB 32 (15)

- Identification of project carbon footprint as it relates to range of alternatives and compliance with AB 32 legislation regarding greenhouse gases.

Cumulative Impacts/Growth Inducement (6)

- Request for wide range of cumulative and growth related project analysis.

Water Rights/Export from Service Area (15)

- Export from Service Area
- Interbasin Transfer
- Priority of Service

Storage Facilities (5)

- Quantification of storage needs, location and impacts.

Socio-Economics (27)

- Cost Benefit of Project/ Incorporation of various elements into cost/benefit analysis (16)
- Long-Term Financial Commitment (2)
- Economic impact to agriculture/dairy (7)
- Economic impact to vineyard (2)

NBWRA Governance/Funding/Objectives (10)

- Cost distribution among agencies/who pays (8)
- Objectives (2)

CEQA/NEPA Issue Areas Impact (34)

- Cultural Resources (6), Biological Resources (12), Recreation (4), Traffic (9), Groundwater (2), Geology (1)

Project Description or Process Clarifications (17)

- Questions from the public regarding project description, EIR/EIS process, or approval process.

3.2 Consideration of Comments Received

A primary purpose of this Scoping Report is to document the process of soliciting and identifying comments from interested agencies and the public. The Scoping Process provides the means by which Reclamation and NBWRA can determine those issues that interested participants consider to be the principal areas for study and analysis. Significant environmental issues that have been raised during scoping will be addressed in the EIS/EIR. The following discussion identifies the issues raised in scoping that will be addressed in the EIS/EIR and provides a brief explanation for those issues that will not be considered in the document.

Water Quality Impacts

The EIR/EIS will review whether recycled water use will have the potential to adversely effect end uses, including agricultural crops, vineyards, golf courses, and other uses. Analysis will also review water quality impacts related to salinity, nutrient loading, micro-constituents.

Conservation and Source Water Protection

The EIS/EIS will describe and discuss water conservation practices within the region within the context of water supply planning. The relationship between water supply, water conservation and recycled water will be reviewed, including the issue of whether increases in water conservation would adversely impact recycled water supply availability. The EIR/EIS will also review whether implementation of recycled water projects would have the potential to adversely affect regional water supplies.

Range of Alternatives

The EIS/EIR will describe and discuss the direct and indirect environmental effects of implementing the proposed project and alternatives. The alternatives consist of a range of recycled water use scenarios within the NBWRA area, and the facilities that would be necessary to produce recycled water under each scenario. A rigorous alternatives screening process has been undertaken to identify the alternatives to be included in the EIS/EIR. This process, including the full range of alternatives evaluated, screening criteria and outcomes will be summarized in the EIS/EIR and fully documented in an Appendix.

As part of the evaluation of alternatives, the EIS/EIR will address a No-Action Alternative. The existing environmental conditions will be described as a baseline condition. The No Action Alternative will consider implementation of a smaller recycled water projects individually by the Member Agencies.

Carbon Footprint/Greenhouse Gases/Assembly Bill 32

The EIR/EIS will include a discussion of the anticipated pumping to transfer recycled water from WWTPs to identified service areas. This will be examined within the context of greenhouse gas generation from electrical use. Analysis will include discussion of Assembly Bill 32, which established a State goal of reducing greenhouse gas emissions to 1990 levels by the year 2020 (a reduction of approximately 25 percent from forecast emissions).

Cumulative Impacts/Growth Inducement

For each resource category, the EIS/EIR will include analysis of cumulative effects of each alternative, in combination with other past, present, and reasonably foreseeable future projects affecting the same resources. Where applicable, this analysis will address other recycled water, water supply and development projects in the geographic areas relevant to each resource.

Potential growth-inducing effects of providing recycled water at levels identified for each alternative will be addressed in the EIS/EIR. Analysis will review provision of recycled water in the context of regional and local water supplies, and will review the potential for the proposed project to result in growth beyond the general plans within the NBWRA service area. Secondary effects of growth, including impacts related to agricultural growth or land use conversion, will be examined.

Water Rights/Export from Service Area

Export of recycled water out of the service area of the NBWRA member agencies, i.e., outside of Marin, Sonoma, or Napa Counties, is not proposed. Water rights issues relating to movement of recycled water across county lines will be examined in the EIR/EIS.

Storage Facilities

For each resource category, the EIR/EIS will include analysis of storage facilities proposed under each alternative. For storage facilities proposed under Phase 1, impacts will be examined at a project level of detail. For storage facilities that have not yet been sited, but are necessary for development of the individual Alternatives, impact will be examined a program level of detail.

Socio-Economics

Comments relating to the feasibility and funding of the project that that are not directly related to physical impact discussions within the environmental impact analysis will be addressed in the EIS/EIR to the extent required under NEPA and CEQA, and as relevant for each specific issue. Socio-Economics and environmental justice issues will be reviewed to the extent required under NEPA and CEQA. Analysis will follow the “rule of reason” as established in NEPA and CEQA case law in considering secondary socio-economic effects.

NBWRA Governance/Funding/Objectives

Comments regarding NBWRA governance, fee structure and funding sources, and the project objectives, will be addressed in the EIR/EIS Introduction, Project Background, and Project Description Sections. NBWRA governance, fee structure and funding sources, and comments on the Project Objectives, do not represent environmental impacts, and will not be examined in the EIR/EIS.

CEQA/NEPA Issue Areas Impact

Cultural Resources

The cultural and historical resources that may be affected by reservoir expansion facilities, including conveyance pipelines and inundation areas, will be assessed in accordance with the requirements of Section 106 of the National Historic Preservation Act, NEPA and CEQA.

Biological Resources

The EIS/EIR will address the potential impacts on plants and wildlife that may occur due to implementation of project alternatives. Specific attention will be placed on species protected by federal or state law or regulations. Analysis will include review of changes in discharge levels relating to recycled water use. Mitigation will be identified and discussed, as appropriate. These measures will be developed in consultation with federal and state resource management agencies with regulatory authority over project implementation.

Recreation

The EIS/EIR will discuss adverse effects on recreational facilities in the project area and potential adverse effects on nearby facilities and regional recreational trail systems. Specifically, the EIR/EIS will address potential impacts on California Parks and Recreational holdings in the Sonoma area.

Transportation and Circulation

Potential impacts to local roadways, including those impacted by recycled water pipeline installation under each of the alternatives, will be evaluated. As appropriate, mitigation will be identified to minimize project related impacts.

Groundwater/Geology

The EIR/EIS will discuss potential impacts to proposed facilities from seismic hazards. Where appropriate, mitigation measures will be identified to reduce potential impacts relating to seismic hazards.

Analysis will also review direct and indirect impacts to groundwater resources, including potential beneficial impact to groundwater due to reductions in agricultural pumping.

Project Description or Process Clarifications

Comments regarding details in the Project Description, or clarifications on the EIR/EIS process, will be addressed in the EIR/EIS Introduction, Project Background, and Project Description Sections.

4.0 Comments Beyond the Scope of the EIS/EIR

Comments related to feasibility, funding, cost-benefit, and socio-economic effects of the Proposed Action that are not directly related to physical impact discussions within the environmental impact analysis will be addressed in the EIS/EIR to the extent required under NEPA and CEQA, and as relevant for each specific issue.

TABLE 1
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
State Agencies				
Letter August, 26 2008		**California Department of Transportation** Lisa Carboni, District Branch Chief, Local Development and Intergovernmental Review	• EIR to discuss the project's fair contribution, financing, scheduling, and implementation responsibilities for mitigation measures.	• CEQA/NEPA Technical Issues- Traffic
			• Traffic mitigation fees should be identified in the EIR/EIS.	• CEQA/NEPA Technical Issues- Traffic
			• Concerned with impacts to the State Highway System and adjacent State facilities.	• CEQA/NEPA Technical Issues- Traffic
			• An encroachment permit is required when the project involves work in the State's ROW.	• CEQA/NEPA Technical Issues- Traffic
			• All roadway improvements should be completed prior to issuance of project occupancy permits.	• CEQA/NEPA Technical Issues- Traffic
			• Environmental analysis to evaluate traffic impacts on State facilities based on peak hour trip criteria and road classifications (LOS C, D, E, F). Methodologies to use in the analysis are provided on their website.	• CEQA/NEPA Technical Issues- Traffic
			• Concerned with compliance with NPDES permit due to potential erosion from construction and permanent runoff.	• CEQA/NEPA Technical Issues- Traffic
			• Concerned with impacts on cultural resources. The Department requires a records search to assure compliance with NEPA and CEQA, and meet requirements for an encroachment permit.	• CEQA/NEPA Technical Issues- Traffic
			• Transportation and encroachment permits will be required.	• CEQA/NEPA Technical Issues- Traffic
Letter, July 31, 2008		**Native American Heritage Commission (NAHC)** Katy Sanchez, Program Analyst	• Lead agency should assess whether the project will have an adverse impact on historical resources within the area of the project effect (APE) and mitigate that effect.	• CEQA/NEPA Technical Issues- Cultural Resources
			• Recommends contacting regional archaeological information center for a record search, which will determine: - If areas of the APE have been previously surveyed - If any known cultural resources have already been recorded on/ adjacent to the APE - Low, moderate, or high probability of cultural resources in the APE - If a survey is required to determine whether previously unrecorded cultural resources are present	• CEQA/NEPA Technical Issues- Traffic
			• If an archaeological inventory survey is required, submit a report detailing findings and recommendations of the records search to the appropriate Planning Department and regional archaeological information center - Report should include: Site forms, site significance, and mitigation measures.	• CEQA/NEPA Technical Issues- Cultural Resources
			• Recommends contacting the NAHC for A Sacred Lands File Check, and a list of appropriate Native American contacts for consultation on the project. (list included)	• CEQA/NEPA Technical Issues- Cultural Resources

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
State Agencies				
		Native American Heritage Commission (NAHC) (cont.)	• Mitigation plan should include provisions for: - the identification and evaluation of accidentally discovered archeological resources (CEQA 15064.5(f)) - the disposition of recovered artifacts - the discovery of Native American human remains. (Health and Safety Code 7050.5, CEQA 15064.5(e)) and Public Resources Code 5097.98	• CEQA/NEPA Technical Issues-Cultural Resources
			• A certified archaeologist and a culturally affiliated Native American should monitor all ground disturbing activities in archeological sensitive areas	• CEQA/NEPA Technical Issues-Cultural Resources
Letter, August 19, 2008		**State Water Resources Control Board** Linda S. Adams, Secretary for Environmental Protection	• Following public review period requests copy of: (1) draft and final EIR/EIR; (2) a resolution certifying the EIR/EIS, adopting the Mitigation Monitoring and Planning Report (MMRP), and making CEQA findings; (3) all comments received during the review period and Agency response to those comments;(4) adopted MMRP; and (5) filed Notice of Determination.	• Governance/ Funding
			• States that Agency is pursuing funds from the Clean Water State Revolving Fund (SRF) Program to construct project.	• Governance/ Funding
			• State Water Board approval of a SRF funding commitment for project is contingent on resolving environmental issues raised by federal agencies or their representatives.	• Governance/ Funding
			• Project is subject to provision of the Federal Endangered Species Act and must obtain Section 7 clearance from the U.S. Fish and Wildlife Service and/ or Nation Marine Fisheries Service.	• CEQA/NEPA Technical Issues- Biological Resources
			• EIR/EIS must identify whether the Project will involve any direct or indirect effects that may affect federally listed threatened or endangered species and identify applicable conservation measures.	• CEQA/NEPA Technical Issues- Biological Resources
08-04-08		**California Department of Fish and Game** Charles Armor, Regional Manager, Bay Delta Region	• EIS/EIR should include an assessment of endangered, threatened, and locally unique habitats, flora, and fauna within and adjacent to the project area.	• CEQA/NEPA Technical Issues- Biological Resources
			• Assessment should include direct and indirect changes, permanent and temporary, that could occur if the project is implemented.	• CEQA/NEPA Technical Issues- Biological Resources
			• Rare, threatened, and endangered species, including all that meet the CEQA definition, should be addressed.	• CEQA/NEPA Technical Issues- Biological Resources

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
State Agencies (cont.)				
08-04-08		**California Department of Fish and Game** Charles Armor, Regional Manager, Bay Delta Region	• Provided a link for recommended survey and monitoring protocols. • A Lake and Streambed Alteration Permit may be required. • EIR should identify impacts to riparian and stream resources and provide avoidance, mitigation, monitoring, and reporting commitments.	• CEQA/NEPA Technical Issues- Biological Resources • CEQA/NEPA Technical Issues- Biological Resources
Letter August, 25 2008		**California Department of Parks and Recreation** Stephen Bachman, Associate Park and Recreation Specialist	• Does not endorse any water line option that would require the use of park lands because it would be inconsistent with the park unit general plan, cultural landscape plan, and the national registrar of historic places designation. • Reiterated concern over the recycled water line traversing through Sonoma SHP. • Supports the SVRWP 2 option (NOP, p. 18). • Has not received notification from the State Clearinghouse.	• CEQA/NEPA Technical Issues- Recreation • CEQA/NEPA Technical Issues- Recreation • CEQA/NEPA Technical Issues- Recreation • CEQA/NEPA Technical Issues- Recreation
Public Organizations				
Website 08-24-08; 12:22 AM		**Groundwater Under Local Protection (GULP), Napa County**	• Would like to see an evaluation of alternatives as part of the project-level analysis. This should include the no project alternative, intermediate alternatives delivering smaller amounts of water, and an alternative delivering a greater amount of water to an expanded service area. • Concerned with the levels of salts and nutrients present in the recycled water and their effects on premium wine grapes. • Concerned with the effects of microconstituents in recycled water on agricultural production and water users. Would like an assessment of ground and surface water contamination potential. • What is the net carbon impact of treating and delivering the proposed volume of recycled water compared to the impact of current practices. • Concerned with cumulative growth impacts. • Concerned that regulatory issues (i.e. inter-basin transfers, water rights relative to groundwater withdrawals, and beneficial reuse requirements) • Would like a description of water use by user segment to be used in the assessment of alternatives. • Wants annual temperature profile of recycled water by County/ source to help determine the impact on temperature-sensitive wine grapes. • Concerned with limitations of reusing all available recycled water.	• Range of Alternatives • Water Quality- Impacts to Agriculture • Water Quality- Microconstituents • Carbon Footprint/ Greenhouse Gases/ AB 32 • Cumulative Growth • Interbasin Transfer/ Water Rights/ Export for Service Area/ Source Water/ Service Priority • Water use by category/ segment • Water Quality- Impacts to Agriculture • Socio-Economic

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
Website 08-24-08; 4:23 PM		**Bill and Lucy Kortum, Residents**	• Want an analysis of irrigated crops. Irrigated crops closer to the source of wastewater will save pumping costs.	• Carbon Footprint/ Greenhouse Gases/ AB 32
			• Want consideration of cost, site availability, and neighborhood resistance to off-season storage.	• Storage
			• Would like wastewater that originates in Sonoma County to remain within the county to be used in the agriculture and dairy industries, instead of being exported.	• Interbasin Transfer/ Water Rights/ Export from Service Area/ Source Waters/Service Priority
			• Want EIR to consider the economic differences between stakeholders to determine priorities for water use.	• Economics/ socio-Economics/ Cost Benefits/ Fees
			• What is the opportunity cost of exporting Sonoma County wastewater elsewhere instead of using it locally for agriculture and dairy production?	• Interbasin Transfer/ Water Rights/ Exports from
			• Would proposed project meet the cost of necessary storage to store wastewater from Santa Rosa and Petaluma?	• Economics/ Socio-Economics/ Cost Benefits/ Fees
Letter August 24, 2008		**Tom Yarish, Resident, Friends of the Esteros, Salmon Protection and Watershed Network (SPAWN)**	• Concerned that the alternatives do not address the need for conservation and water source protection.	• Russian/ Eel River Source Water Protection
			• Concerned that the DEIR does not redress illegal water appropriations.	• Water Rights/ Priority
			• Opposes water exportation, as it violates provisions in the California Water Code that prohibit the export of water from any California watershed.	• Export from Service Area/ Source Waters/ Service Priority
			• Wants water users within the Russian River watershed to have priority on water.	• Interbasin Transfer/ Water Rights/ Priority
			• Wants SCWA to exercise higher levels of conservation prior to exporting potable water and reclaimed wastewater outside the boundaries of the SCWA.	• Conservation/ Export from Service Area/ Source Waters/Service Priority
			• Wants DEIR to consider the long-term costs of energy for pumping and treatment and analyze costs against the lost opportunity costs of conservation and local reuse.	• Economics/ Socio-Economics/ Cost Benefits/ Fees
			• Concerned about impacts from contaminants in wastewater on wildlife and high costs of difficult treatment.	• Water Quality-Microconstituents
Letter August 25, 2008		**David Keller, Bay Area Director, Friends of the Eel River**	• Would like water to stay within watershed it originated in, and be recycled to reduce demand on overstressed rivers, instead of vineyard expansion.	• Russian/ Eel River Source Water Protection/ Conservation Measures
			• Would like a project alternative that will reduce demands for diversions from these water sources by offsetting potable water demands upstream.	• Russian/ Eel River Source Water Protection
			• Supports restoration of Napa Salt Marsh and reduction of discharges of treated wastewater to SPB.	• Alternatives
			• Would like Project Objective's to be redefined to protect the Eel and Russian Rivers and Santa Rosa groundwater.	• Water Quality/Objectives

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
Public Organizations (cont.)				
		David Keller, Bay Area Director, Friends of the Eel River (cont.)	• Concerned with significant impacts and cumulative impacts of the project on source waters, fisheries, and flows, water quality, erosion, and groundwater replenishment. • Wants clarification on regulatory concerns, like changes in 1610, listing of the Russian and Eel Rivers on the 303 (d) list, listing of salmonids under the Endangered Species Act, changes in FERC flow requirements, among others. • Wants a discussion of possible governance, financial, and administrative alternatives in order to evaluate the environmental and economic impact of individual proposed structures. • Concerned by impacts from continued diversions, demands for water to remain in the river system, long-term needs for recycling and reuse, expansion of the North Bay Aqueduct, irrigation practices, wastewater contaminants, on the source waters and fisheries of the Eel and Russian Rivers, and SR Groundwater. • Concerned with impacts from proposed project pumping facilities and potential greenhouse gas generation. • What is the regional impact on water storage? • Impacts on the viticulture industry, including impacts of competing use of treated watewaster for irrigation versus dairy production, international trade, drainage. • Identify impacts and techniques to reduce through-put of water and loads to participating WWTPs. • Address an “Alternative 4” to reduce impacts from above-listed issues.	• Cumulative Impacts • Cumulative Impacts • Governance/ Funding • Russian/ Eel River Source Water Protection/ Conservation Measures • Carbon Footprint/ Greenhouse Gases/ AB 32 • Storage • Economic Impact to Agriculture • Russian/ Eel River Source Water Protection/ “Through put” • Range of Alternatives
Letter August 24, 2008		**Edwin (Ned) Orrett**	• Concerned that the effects of greenhouse gas emissions and the overall costs of the project are not sustainable. • Would like the project to provide a net reduction in regional carbon emissions. • Project should reflect a multi-jurisdictional, holistic design. One solution should include conservation and water efficiency upstream. • Made comparisons to Santa Rosa’s municipal water cycle and emissions. • Cost concerns: 1) Indoor water use, the source of supply for wastewater agencies, is the most expensive for upstream users; 2) If the volume of wastewater effluent to wastewater plants is reduced, less reclamation infrastructure may be required, thereby reducing costs.	• Carbon Footprint/ Greenhouse Gases/AB 32 • Carbon Footprint/ Greenhouse Gases/AB 32 • Russian/ Eel River Source Water Protection/ Conseravtion • Carbon Footprint/ GHG Gases/AB 32 • Socio - Economics
Letter August, 26 2008		**Barbara Salzman,** **Marin Audubon Society**	• Concerned with impacts on existing habitat. List all potentially impacted habitats, a describe baseline conditions, construction impacts, potential habitat changes.	• CEQA/NEPA Technical Issue - Biological Resources

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
Public Organizations (cont.)				
		Marin Audubon Society (cont.)	• Would like a discussion about the impacts on water quality, wetlands, and aquatic habitats. Concerned with the discharge of treated water to streams, nutrient loading, and the accumulation of heavy metals.	• CEQA/NEPA Technical Issue - Biological Resources
			• Provided questions for further analysis for the three alternatives regarding the following issues:	• Water Quality-Microconstituents
			- Availability of wastewater to accommodate projected water quantity;	- Water Quality-Microconstituents/-Impacts to Envm.
			- Use of water from the Napa saltpond;	- Water Quality-Impacts to Envm.
			- Definition, uses, and locations of "potential user" ponds;	- Storage
			- Impacts from an additional pipeline;	- Biological Resources
			- Storage.	- Storage
			• Concerned with cumulative impacts on biology	• CEQA/NEPA Technical Issue - Biological
			• Concerned with growth inducing impacts, particularly in the Port Sonoma area.	• Cumulative Growth
Email (08-16-08) With attached letter (11-11-07)		**Stephen Fuller-Rowell, Sonoma County Water Coalition (SCWC)**	• DEIR/ EIS should address issues raised in the October 2007 letter to Senator Jeff Bingaman, Chairman of Senate Energy and Natural Resources Committee	• Russian/ Eel River Source Water Protection/ "Through put"
			Letter summarized as follows:	
			• SCWC urges to defeat the defective bill (S.1472 North Bay Water Reuse Program Act of 2007 Companion Bill, H.R.236) and offers assistance in rewriting the bill	• Russian/ Eel River Source Water Protection/ "Through put"
			• SCWC has worked since 2004 to get public policies in place to protect and restore the Russian and Eel Rivers, home to 3 species of listed salmonids	• Russian/ Eel River Source Water Protection
			• Sonoma County Water Agency (SCWA) is subject to 15% mandatory cutbacks in withdrawals from the Russian River	• Russian/ Eel River Source Water Protection/ Conservation
			• It is necessary to plan for the long term future of reliable water supplies in our region, while protecting and restoring our natural public trust resources	• Russian/ Eel River Source Water Protection/ Conservation
			• SCWC is working to reduce demands for potable water and to maximize water efficiencies and conservation. They support appropriate reuse of highly treated wastewater within SCWA service area to displace potable water demands, and eliminate exports of SCWA water to other regions.	• Interbasin Transfer/ Water Rights/ Export from Service Area/ Source Waters/ Service Priority
			• The bill fails to set any priority that the recycled water be used to offset and reduce local potable water demands first	• Interbasin Transfer/ Water Rights/ Exports/ Source Waters/ Service Priority
			• The bill fails to set any limits on exporting water or mandate addressing the impacts from source waters (Russian, Eel Rivers/ Sonoma County groundwater)	• Interbasin Transfer/ Water Rights/ Export from Service Area/ Source Waters/ Service Priority
			• The bill fails to provide limits on how far the pipelines and pumps maybe built	

TABLE 1 (Continued)
NOP/NOI SCOPING SUMMARY

Meeting Date/Time	No.	Commenter, Affiliation	Comments	Category
Public Organizations (cont.)				
		Stephen Fuller-Rowell, Sonoma County Water Coalition (SCWC) (cont.)	• The bill fails to provide limits on future use of the pipelines, particularly those to serve the Napa-Sonoma Marsh Restoration Project	• Interbasin Transfer/ Water Rights/ Export from Service Area/ Source Waters/ Service Priority
			• Most of the treated wastewater is derived from the SCWA-supplied municipal contractors' treated wastewater, and should not be available to offset new of existing potable water demands	• Russian/ Eel River Source Water Protection/ Conservation
			• Wastewater providers have expressed concerns over the cost to independently finance the infrastructure to support the project	• Economics/ socio-Economics/ Cost Benefits/ Fees
			• SCWC supports Policy WR-5a from the final Draft Sonoma County General Plan, which states: "Any consideration to export additional water resources place primary priority upon the benefit of and need for the water resources in Sonoma County and shall assure that water resources needed by urban, rural and agricultural water users in Sonoma County will not be exported outside the county." (Policy WR-5a)	• Interbasin Transfer/ Water Rights/ Export from Service Area/ Source Waters/ Service Priority

TABLE 2
SCOPING MEETING COMMENTS

Scoping Meeting Comments			
Napa County Scoping Meeting 8-04-08			
	Unidentified Napa Residents (Question/Answer)	• Is the Silverado Country Club included? • What is the connectivity of the aquifer with the aquifers in the MST area • Expresses concern about pipeline routes through private property • EIR should address project alternatives • Has the County retained a consultant to assess any local project • EIR should address project costs including future regulatory requirements under the "No Project" Alternative • EIR should indicate intended use of recycled water • EIR should address what portion of project cost would be funded by each Agency • EIR should analyze effects of seismic activity to facilities • EIR should include user cost analysis	• Project Description • Project Description • Project Description • Range of Alternatives • Project Description • Socio- Economic • Project Description • Governance/ Funding • Geology • Socio-Economic
	Hugh Cornwall	• Concern about project's effect on groundwater levels	• Geology
	Jerry Gauthier	• Question about allocation of recycled water	• Governance/Funding
	Fred Swingle	• Inquired about ESA and the CEQA process	• Project Description/ Process
	Chuck Rathjen	• Concerns about project funding and participants	• Project Description/ Process
	Mark Gorney	• How do the agencies decide on which alternative to chose through the CEQA process	• Project Description/ Process
Marin County Scoping Meeting 08-05-08			
	Unidentified Marin Residents (Question/Answer)	• What is the intended use of the recycled water • EIR should address desalination in the alternatives sections • EIR should provide background information on the Napa Salt Marsh Project • What is the anticipated recycled water need for the Napa Salt March • What are the construction details; will the pipeline be visible • EIR should analyze effects of reducing discharge to Bay • Are other counties implementing similar projects • Define pipeline easement in the Napa Salt Marsh portion of the project • Define cost estimates related to service area • Define recycled water fees • How will EIR/EIS findings lead to project implementation	• Project Description/ Process • Alternatives • Project Description/ Process • Project Description/ Process • Project Description/ Process • Water Resources • Project Description • Project Description • Governance/Funding • Governance/Funding • Project Description/Process

TABLE 2 (Continued)
SCOPING MEETING COMMENTS

Marin County Scoping Meeting 08-05-08 (cont.)			
		• Does the project relate/ fit with other projects being implemented in CA [i.e. So Cal and recycled water for potable use] • Define Tertiary treatment • Do the fields by the Hwy 37 overpass use recycled water	• Cumulative • Project Description/ Process • Project Description/ Process
	Dick O'Brien	• When is the expected project implementation	• Project Description/ Process
	Karen Loci	• How does the project prioritize users of recycled water	• Project Description/ Process
	Berry Buckley	• San Rafael and Terra Linda both use and support recycled water use. Supports project	• Project Description/ Process
Russian River Interest Groups - Scoping Meeting 08-06-08			
Scoping Meeting 8-06-08, ESA Petaluma	David Keller	• EIR/EIR needs a 4th Alternative to address conservation and sustainable practices • Meetings should be announced in Northern watersheds • Water is not an infinite resource • The project needs to be feasible in 50 years; financial analysis should include a 50 year range • Draft EIR will be fully faulted with CDM alternatives Project is grossing ineffective morally, ethically, and environmentally • EIR/EIS needs to analyze 50 year ecological footprint • Project needs to have a zero carbon footprint- how is this possible with 5,000 to 11,000 hp of pumping • SCWA needs to use conservation measures and reduce users • EIR/EIS should discuss of the impact to source waters and overdrafts on Eel and Russian Rivers • EIR/EIS should address secondary impacts of the collapse of dairies if vineyard users take priority over diary users • This project supports vineyard users that over-irrigate then drain their fields; this must stop • Primary goal of the project should be to offset potable water demand. This project does not reduce demand because agricultural users have permanent contracts. SCWA has the power to change water use.	• Alternatives • Project Description/ Process • Project Description/ Process • Socio- Economic • Project Objectives • Socio- Economic • Carbon Footprint/ Greenhouse Gases/ AB 32 • Conservation and Source Water Protection • Conservation and Source Water Protection • Socio- Economics/ Land Use • Water Resources • Project Objectives
	Don Lollock	• Concern about benefits to urban vs. agriculture (vineyard) • Urban use and future demands need to be re- examined • Program should focus on urban users rather than agricultural users	• Socio-Economics • Conservation and Source Water Protection • Conservation and

TABLE 2 (Continued)
SCOPING MEETING COMMENTS

		• Highest priority of use for treated wastewater is to reduce current and future urban demands locally	• Source Water Protection
		• Project should not create new vineyard customers	• Conservation and Source Water Protection
		• CDM draft EIR/EIS needs to be redone with a 4th Alternative- to address impacts on sources waters (Russian/ Eel Rivers)	• Conservation and Source Water Protection • Alternatives
Russian River Interest Groups - Scoping Meeting 08-06-08 (cont.)			
	Ned Orritt	• Project should focus on interaction between financial (bonds) and sustainability- easiest way to do this is to focus up river	• Socio- Economics
		• Does this project decrease incentives to improve water use efficiency in order to maintain an inflow of effluent for recycled water production?	• Project Objectives
		• 80% of greenhouse gasses in the municipal water cycle is from customer's homes	• Carbon Footprint/ Greenhouse Gases/AB 32
		• The best way to improve water supply is to increase conservation (efficiency) first. This project should seek to improve upstream efficiency first then recycle	• Conservation and Source Water Protection
		• Recommends to research other options to answer greenhouse gas/ water issues	• Carbon Footprint/ Greenhouse Gases/AB 32
	Tom Yarish	• Not convinced to move water out of watershed	• Conservation and Source Water Protection
		• Project diverts attention from other needs and dignifies uses that should not happen	• Conservation and Source Water Protection
		• Should reduce consumption locally first (agrees with Ned)	• Conservation and Source Water Protection
		• EIR/EIS should address Water Quality issues- mixing different treatment levels together	• Water Quality
	Bill Cortum	• Involved in Water Reuse/ Ag issues since 1972; need to protection of open space; Need to keep water here	• Project Description
		• Storage will be biggest problem- how will you pay for adequate storage	• Storage/Socio-Economics
		• Although there is urban pressure we should try to keep dairies here to diversify land use	• Land Use
		• Dairies should be prioritized to receive recycled water above vineyards	• Project Objectives
		• Who pays for what in this project	• Governance/ Funding
	Veronica Jacobi (commenting as private citizen)	• EIR/EIS should address climate change impacts: - Wildlife enhancement - Diversity of agriculture (look at existing ag. And see how the project will increase demand) - Need to research better uses for water and money	• Carbon Footprint/ Greenhouse Gases/AB 32 • Land Use • Socio- Economic

TABLE 2 (Continued)
SCOPING MEETING COMMENTS

		(i.e., promoting grey water use) • If this project improves agricultures ability to survive, who should pay for each portion of project • EIR/EIS should address carbon footprint of project; what would it take to have a zero footprint • What is the best way to reduce emissions- only run pumps at certain times (to keep system functional) to where water is needed the most • Consider an alternative that solves the problem in a different way	• Governance/Funding • Carbon Footprint/ Greenhouse Gases/AB 32 • Carbon Footprint/ Greenhouse Gases/AB 32 • Range of Alternatives
		• If the worst case scenario happens in terms of climate impacts, what happens to this project and the environment • Evaluate all things in the context of worst case climate change: carbon sequestration, wildlife enhancement, algae for biofuels, agricultural diversity/ benefits • What if there is an energy price increase	• Carbon Footprint/ Greenhouse Gases/AB 32 • Carbon Footprint/ Greenhouse Gases/AB 32 • Socio- Economic
	Tiffany Renee	• How will future consumer labeling of wine (with use of recycled water) affect industry. • Was this taken into account with the economic model.	• Socio- Economic • Socio- Economic
	John Roberts	• Title 16 money competition with the City of Santa Rosa (Thompson/ Woolsey) • Russian River should be recycled back North- keep water in once watershed	• Socio- Economic • Conservation and Source Water Protection

APPENDIX 3.1
Geology

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to geology and the proposed project.

LGVSD

City of San Rafael General Plan

S-4. Geotechnical Review: Continue to require geotechnical investigations for development proposals as set forth in the City's Geotechnical Review Matrix (Appendix F). Such studies should determine the actual extent of geotechnical hazards, optimum design for structures, the advisability of special structural requirements, and the feasibility and desirability of a proposed facility in a specified location.

S-4a. Geotechnical Review of Proposed Development: Require soils and geologic peer review of development proposals in accordance with the Geotechnical Review Matrix to assess such hazards as potential seismic hazards, liquefaction, landsliding, mudsliding, erosion, sedimentation and settlement in order to determine if these hazards can be adequately mitigated. Levels of exposure to seismic risk for land uses and structures are also outlined in the Geotechnical Review Matrix, which shall be considered in conjunction with development review.

S-5. Minimize Potential Effects of Geological Hazards: Development proposed within areas of potential geological hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. Development in areas subject to soils and geologic hazards shall incorporate adequate mitigation measures. The City will only approve new development in areas of identified hazard if such hazard can be appropriately mitigated.

S-7. Minimize Potential Effects of Landslides: Development proposed in areas with existing landslides or with the potential for landslides (as identified by a registered engineering geologist or geotechnical engineer) shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. Development in areas subject to landslide hazards shall incorporate adequate mitigation measures that have a design factor of safety of at least 1.5 for static conditions and 1.0 for pseudo-static (earthquake) conditions. The landslide mitigation should consider multiple options in order to reduce the secondary impacts (loss of vegetation, site grading, traffic, visual) associated with landslide

mitigation. The City will only approve new development in areas of identified landslide hazard if such hazard can be appropriately mitigated.

S-9. Post Earthquake Inspections: Require post-earthquake building inspections of critical facilities, and restrict entry into compromised structures. Inspections shall be conducted when the earthquake intensity if VII or higher per the Modified Mercalli Intensity Scale. Require inspections as necessary in conjunction with other non-city public agencies and private parties for structural integrity of water storage facilities, storm drainage structures, electrical transmission lines, major roadways, bridges, elevated freeways, levees, canal banks, and other important utilities and essential facilities.

S-9a. Inspection List: Identify a list of facilities that would be inspected after a major earthquake. The list shall identify City-owned essential or hazardous facilities as defined by Category 1 and 2 of Table 16-K of the Uniform Building Code, and shall prioritize the list for inspection scheduling purposes in case of an earthquake.

S-13. Potential Hazardous Soils Conditions: Where development is proposed on sites with known previous contamination, sites filled prior to 1974 or sites that were historically auto service, industrial or other land uses that may have involved hazardous materials, evaluate such sites for the presence of toxic or hazardous materials. The requirements for site-specific investigation are contained in the Geotechnical Review Matrix.

S-13a. Potentially Hazardous Soils Map: Using the San Rafael environmental database, develop a map showing sites with known soil and groundwater contamination. Prepare a map to be available to the Community Development Department in order to identify new developments that warrant environmental investigation and testing.

S-13b. Hazardous Soils Cleanup: Require remediation and cleanup in accordance with regional and local standards in order to develop on sites where hazardous materials have impacted soil or groundwater. At a minimum, remediation and clean up of contaminated sites shall be in accordance with regional and local standards. The required level of remediation and clean-up shall be determined by the Fire Department based on the intended use of the site and health risk to the public. Require appropriate control measures in areas susceptible to erosion, in conjunction with proposed development. Erosion control measures and management practices should conform to the most recent editions of the Regional Water Quality Control Board's Erosion and Sediment Control Field Manual and the Association of Bay Area Governments' Manual of Standards for Erosion and Sediment Control or equivalent.

S-22a. Erosion Control Programs: Review and approve erosion control programs for projects involving grading one acre or more or 5,000 square feet of built surface as required by Standard Urban Stormwater Management Plans (SWMP). Evaluate smaller projects on a case-by-case basis.

S-22b. Grading During the Wet Season: Discourage grading during the wet season and require that development projects implement adequate erosion and/or sediment control and runoff discharge measures

Marin Countywide Plan

The Marin Countywide Plan contains a Built Environment Element, which identifies and assesses known conditions and seismic hazards. The Plan outlines goals, with corresponding policies and implementation programs. These goals, policies, and implementation programs are listed below.

Goal EH-2.1: Safety from Seismic and Geologic Hazards. Protect people and property from risks associated with seismic activity and geologic conditions.

Policy EH-2.1: Avoid Hazard Areas. Require development to avoid or minimize potential hazards from earthquakes and unstable ground conditions.

Implementing Program EH-2.a: Require Geotechnical Reports. Continue to require any applicant for land division, master plan, or development approval in a geologic hazard area to submit a geotechnical report prepared by a State-certified engineering geologist, in conformance with the State Seismic Hazards Mapping Act, that:

- evaluates soil, slope, and other geologic conditions;
- commits to appropriate and comprehensive mitigation measures sufficient to reduce risks to acceptable levels, including post-construction site monitoring, if applicable; and
- addresses on-site structural engineering, impact of the project on adjacent lands, and potential impacts of off-site conditions.

Implementing Program EH-2.b: Require Construction Certification. Require any work undertaken to correct slope instability or mitigate other geologic conditions to be supervised and certified by a geotechnical engineer and, when necessary, an engineering geologist.

Implementing Program EH-2.e: Retrofit County Buildings. Identify and remedy any County-owned structures in need of seismic retrofit or other geotechnical improvement, including by eliminating any potentially hazardous features and/or relocating buildings if necessary.

Implementing Program EH-2.f: Avoid Known Landslide Areas. Continue to prohibit development in landslide areas and on landslide-prone deposits on steep slopes, except where the required geotechnical report indicates that appropriate mitigation measures can stabilize the site for construction.

Implementing Program EH-2.g: Identify Compressible Soil Potential. Require that geotechnical reports for projects on land underlain by compressible materials (such as fill, bay mud, and marsh or slough areas) delineate locations where settlement will be greatest and subsidence may occur, and recommend site preparation and construction techniques necessary to reduce the risk and public liability to an acceptable level.

Implementing Program EH-2.h: Match Uses to Conditions. Amend the Development Code to limit uses in areas with high potential for slope instability or differential soil activity to those that would not be damaged by ground movement and that would provide minimum inducement to slope instability or differential settlement.

Implementing Program EH-2.i: Minimize Impacts of Site Alteration. Amend the Development Code to strictly limit the extent of any proposed fill, excavation, or grading activities that could create or exacerbate risks in areas susceptible to geologic hazards.

Implementing Program EH-2.j: Seek Supplemental Expertise. Continue to hire consultants expert in soils engineering as necessary for evaluating specific development proposed on bay mud and fill prone to differential settlement (County of Marin, 2004).

Novato SD

City of Novato General Plan

The City of Novato General Plan contains a Safety Element, which identifies and assesses known conditions and seismic hazards. The Plan outlines goals, with corresponding policies and implementation programs. These goals, policies, and implementation programs are listed below.

SF Objective 1: Reduce seismic hazards.

SF Policy 1 Seismic Hazards: Reduce the risk of loss of life, personal injury and damage to property resulting from seismic hazards.

SF Program 1.1: Continue to require geotechnical and engineering geology reports by consulting Certified Engineering Geologists and/or Registered Geotechnical Engineers for development proposals on sites in seismically and geologically hazardous areas and for all critical structures. These reports should include, but not be limited to: evaluation of and recommendations to mitigate the effects of ground shaking, landslides, surficial debris flows, expansive soils, subsidence and settlement, fault displacement, Bay mud areas, and all areas shown on SF Map 1 as damage level moderate or heavy. Reference must also be made to standard geological and geological hazards maps.

SF Program 1.2: Continue to require, as conditions of approval, measures to mitigate potential seismic hazards for structures.

SF Program 1.3: Continue to require professional inspection of foundation and excavation, earthwork and other geotechnical aspects of site development during construction on those sites specified in geologic, and geotechnical studies as being prone to moderate levels of seismic hazard, in accordance with the current version of the UBC.

SF Program 1.4: Continue to monitor and review existing critical, high priority buildings to ensure structural compliance with seismic safety standards.

SF Policy 2 Building in Areas with Significant Risk Potential: Discourage construction of high density residential, and other critical, high-occupancy or essential services buildings in high risk zones.

SF Program 2.1: Continue to require adherence to the UBC for Seismic Risk Zone 4 in order to protect against seismic hazards.

SF Program 2.2: Establish setbacks from active or potentially active fault traces for structures intended for human occupancy.

SF Objective 2: Minimize the risk of personal injury and property damage resulting from slope and soil instability.

SF Policy 3 Slope and Soil Instability: Continue to enforce existing regulations and procedures to identify potential hazards relating to geologic and soils conditions.

SF Program 3.1: Require evaluation of all slopes, unstable land, areas susceptible to liquefaction or settlement, and areas containing expansive soils for safety hazards prior to issuance of any discretionary approvals and require appropriate mitigation measures.

SF Program 3.2: Require that development in areas identified by SF Map 2: Slope Instability be evaluated and, as appropriate, supervised by a Certified Engineering Geologist or a registered Geotechnical Engineer.

SF Program 3.4: Require repair, stabilization, or avoidance of landslides, or areas of soil creep or possible debris flow as a condition of project approval (City of Novato, 1996).

Unincorporated Marin County

See LGVSD discussion.

SVCSD

City of Sonoma General Plan

The City of Sonoma General Plan (City of Sonoma, 1995) contains the following goals, objectives, and policies that would be applicable to the proposed project:

Goal PSE-1: Minimize risks to life and property posed by seismic and other geologic hazards.

Policy 2: The City shall continue to require, as conditions of project approval, the incorporation of measures which eliminate or reduce to acceptable levels identified risks associated with relevant geologic hazards.

Sonoma County General Plan

The Safety Element of the Sonoma County General Plan identifies the goals for reducing existing potential hazards and increasing a range of services relating to safety and health (Sonoma County, 1998). Various policies are applicable to geologic hazards within unincorporated Sonoma County and may be applicable to the proposed project.

Goal PS-1: Prevent unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides and other geologic hazards.

Objective PS-1.1: Continue to utilize available data on geologic hazards and associated risks.

Objective PS-1.2: Regulate new development to reduce the risks of damage and injury from known geologic hazards to acceptable levels.

The Sonoma County General Plan also has developed policies to protect mineral resources.

Goal RC-11: Provide for production of aggregates to meet local needs and contribute the County's share of demand in the North Bay production-consumption region. Manage aggregate resources to avoid needless resource depletion and ensure that extraction results in the fewest environmental impacts.

Objective RC-11.1: Use the Aggregate Resources Management Plan to establish priority areas for aggregate production and to establish detailed policies, procedures, and standards for mineral extraction.

Objective RC-11.2: Minimize and mitigate the adverse environmental effects of mineral extraction and reclaim mined lands.

Napa SD

City of Napa

HS Goal 1: To minimize the risk to life and property from seismic activity.

HS-1.2: The City shall discourage the siting of facilities necessary for emergency services, major utility lines and facilities, manufacturing plants using or storing hazardous materials, high occupancy structures (such as multi-family residences and large public assembly facilities), or facilities housing dependent populations (such as schools and convalescent centers) within areas subject to very strong, violent, or very violent ground shaking, as indicated in the ABAG Groundshaking Intensity Maps (Figure 8-1A and B), unless no alternative is available and adequate mitigation measures can be incorporated into the project.

HS-1.4: The City shall require special construction features in the design of structures where site investigations confirm potential seismic hazards.

HS Goal 2: To minimize the hazards to people and property caused by soil erosion and landslides.

HS-2.1: The City shall seek to minimize grading and impermeable surfaces in high-erosion areas. If grading or impermeable surfaces are necessary, they shall be properly engineered and drained to reduce runoff and erosion.

HS-2.2: The City shall consider natural landform contours and geologic conditions in the development of roadways and individual project design.

HS-2.3: The City shall continue to regulate development on hillsides to reduce the hazards posed by soil erosion and landslides.

HS-2.4: The City shall require that an erosion control plan be prepared and approved for development on slopes of 15 percent or greater. The plan should include limitations on vegetation removal, revegetation, and installation of other erosion and sedimentation control measures.

HS-2.5: The City shall continue to apply its Hillside Development Guidelines to properties in sensitive hillside locations.

Napa County General Plan

Goal SAF-2: To the extent reasonable, protect residents and businesses in the unincorporated area from hazards created by earthquakes, landslides, and other geologic hazards.

Policy SAF-8: Consistent with County ordinances, require a geotechnical study for new projects and modifications of existing projects or structures located in or near known geologic hazard areas, and restrict new development atop or astride identified active seismic faults in order to prevent catastrophic damage caused by movement along the fault. Geologic studies shall identify site design (such as setbacks from active faults and avoidance of on-site soil-geologic conditions that could become unstable or fail during a seismic event) and structural measures to prevent injury, death and catastrophic damage to structures and infrastructure improvements (such as pipelines, roadways and water surface impoundments not subject to regulation by the Division of Safety of Dams of the California Department of Water Resources) from seismic events or failure from other natural circumstances.

Policy SAF-9: As part of the review and approval of development and public works projects, planting of vegetation on unstable slopes shall be incorporated into project designs when this technique will protect structures at lower elevations and minimize the potential for erosion or landslides. Native plants should be considered for this purpose, since they can reduce the need for supplemental watering which can promote earth movement.

Policy SAF-10: No extensive grading shall be permitted on slopes over 15 percent where landslides or other geologic hazards are present unless the hazard(s) are eliminated or reduced to a safe level.

APPENDIX 3.2
Surface Hydrology

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to surface hydrology and the proposed project.

LGVSD

Marin Countywide Plan

The Marin Countywide Plan includes the following goals related to hydrology (Marin County, 2007):

> **Goal WR-1: Healthy Watersheds.** Achieve and maintain proper ecological functioning of watersheds, including sediment transport, groundwater recharge and filtration, biological processes, and natural flood mitigation, while ensuring high-quality water.
>
> > *Policy WR-1.1*: Protect Watersheds and Aquifer Recharge. Give high priority to the protection of watersheds, aquifer-recharge areas, and natural drainage systems in any consideration of land use.
> >
> > *Policy WR-1.2*: Restore and Enhance Watersheds. Support watershed restoration efforts, coordinate County watershed activities with efforts by other groups, and simplify permit acquisition for watershed restoration and enhancement projects.
> >
> > *Policy WR-1.3*: Improve Infiltration. Enhance water infiltration throughout watersheds to decrease accelerated runoff rates and enhance groundwater recharge. Whenever possible, maintain or increase a site's predevelopment infiltration to reduce downstream erosion and flooding.
> >
> > *Policy WR-1.4*: Protect Upland Vegetation. Limit development and grazing on steep slopes and ridgelines in order to protect downslope areas from erosion and to ensure that runoff is dispersed adequately to allow for effective infiltration.
>
> **Goal WR-3: Adequate Water for Wildlife and Humans.** Ensure that the available supply of surface and groundwater is used responsibly, so that the needs of both wildlife and human populations are met.
>
> > *Policy WR-3.1*: Conserve Water and Develop New Sustainable Sources. Reduce the waste of potable water through efficient technologies, conservation efforts, and design and management practices, and by better matching the source and quality of water to the user's needs.

Policy WR-3.2: Mitigate Water Demand in New Development. Assess and mitigate the impacts of new development on potable water supplies and water available for wildlife.

Novato SD

City of Novato General Plan

The City of Novato General Plan includes the following objectives and policies related to surface water (City of Novato, 2003):

EN Objective 1: Preserve, protect, and enhance streams and other bodies of water.

EN Policy 1 Ecology of Creeks and Streams. Preserve and enhance the ecology of creeks and streams.

EN Policy 4 Erosion Control. Minimize soil disturbance and surface runoff in the Stream Protection Zones. Pursuant to the City's grading ordinance, work in and adjacent to the zones shall be conducted during the dry season only, at times when the Community Development Department determines that surface runoff will be minimal or containable.

EN Objective 10: Preserve, protect, and enhance water resources.

EN Policy 35 Watershed Management. Minimize the effects of pollution in stormwater runoff. Retain and restore where feasible the natural hydrological characteristics of watersheds in the Novato Area of Interest.

SVCSD

City of Sonoma General Plan

The City of Sonoma 2020 General Plan lists the following goals, policies, and implementation measures to protect the water resources in the City of Sonoma (City of Sonoma, 2004b):

Goal ERE-2: Identify, preserve, and enhance important habitat areas and significant environmental resources.

Policy 2.4: Protect Sonoma Valley watershed resources, including surface and ground water supplies and quality.

Implementation measures include:

2.4.1. Prepare and implement a comprehensive strategy for water conservation and the protection of water quality, including quantified objectives, with the goal of producing a Water Element for the General Plan.

2.4.2. Update the Development Code to ensure that new development incorporates applicable "best-management" construction and post-construction practices and design features, including maintenance programs where warranted, that provide quantified results in reducing run-off and protecting water quality.

2.4.3. Work with the Sonoma County Water Agency, the Valley of the Moon Water District, the Sonoma Ecology Center and other appropriate agencies to monitor groundwater resources and to develop a ground water management plan, including guidelines and standards for preserving and enhancing valley watershed and surface and groundwater resources.

2.4.4. Continue the street sweeping program and extend it as necessary to serve new development.

Sonoma County General Plan

The Sonoma County General Plan lists goals to protect water resources in the County (Sonoma County, 1998). The following goals apply to the proposed project.

Goal RC-3: Conserve, enhance, and manage water resources, protect their quality, and assure an adequate long term supply of water for domestic, fishing, industrial and agricultural use.

Objective RC-3.1: Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.

Objective RC-3.2: Provide development standards in recharge areas to maintain groundwater supplies.

Objective RC-3.3: Preserve and enhance the quality of surface and groundwater resources.

Objective RC-3.4: Insure that land uses in rural areas be consistent with the availability of groundwater resources.

Goal RC-2: Promote and encourage soil conservation and management practice that maintain the productivity of soil resources.

Objective RC-2.1: Ensure that permitted uses are compatible with reducing potential damage due to soil erosion.

Objective RC-2.2: Establish ways to prevent soil erosion and restore areas damaged by erosion.

Napa SD

Napa County General Plan

The Napa County General Plan includes the following water resources goals related to surface water (Napa County, 2008):

Goal CON-10: Conserve, enhance and manage water resources on a sustainable basis to attempt to ensure that sufficient amounts of water will be available for the uses allowed by this General Plan, for the natural environment, and for future generations.

Goal CON-13: Promote the development of additional water resources to improve water supply reliability and sustainability in Napa County, including imported water supplies and recycled water projects.

Related policies include:

Policy CON-41: The County will work to protect Napa County's watersheds and public and private water reservoirs to provide for the following purposes: a) Clean drinking water for public health and safety; b) Municipal uses, including commercial, industrial and domestic uses; c) Support of the eco-systems; d) Agricultural water supply; e) Recreation and open space; and f) Scenic beauty.

Policy CON-42: The County shall work to improve and maintain the vitality and health of its watersheds. Specifically, the County shall: …

d) Support environmentally sustainable agricultural techniques and best management practices (BMPs) that protect surface water and groundwater quality and quantity (e.g., cover crop management, integrated pest management, informed surface water withdrawals and groundwater use).

e) Promote and support the use of recycled water wherever feasible, including the use of tertiary treated water, to help improve supply reliability and enhance groundwater recharge.

Policy CON-46: Napa County's past, present, and future are intertwined with that of the Napa River; therefore, the County is committed to improving and sustaining the health of the river, through attaining water quality and habitat enhancement goals, supporting public access to the river for visual appreciation and recreational purposes, and completing federal, state, and local flood control projects that are consistent with "living rivers" principles.

APPENDIX 3.3
Groundwater Resources

Local

There are three key methods used to provide groundwater management in California:

- Management by local agencies under authority granted in the California Water Code or other applicable State statutes;
- Local government groundwater ordinances or joint powers agreements; and
- Court adjudications (DWR 2003).

There are no adjudicated basins within the study area. Local groundwater management plans and county ordinances vary by authority/agency and region but generally involve provisions to limit or prevent groundwater overdraft, regulate transfers, and protect groundwater quality. The Sonoma Valley Groundwater Management Plan (SCWA 2007) is the only groundwater management plan in effect within the study area. Napa County is currently the only county within the study area with a groundwater management ordinance. Napa, Sonoma, and Marin Counties regulate groundwater use and quality by requiring permits prior to the construction, reconstruction, or destruction of groundwater wells in order to protect groundwater quality. Local cities in the study area have generally adopted existing county well requirements and require a permit or other type of approval prior to the construction of any new groundwater well.

Sonoma Valley Groundwater Management Plan

In November 2007, SCWA adopted the *Sonoma Valley Groundwater Management Plan (SCWA 2007)*. The plan covers the entire Sonoma Creek watershed and identifies actions to sustain groundwater resources for future generations. The key goal of the plan is to "locally manage, protect, and enhance groundwater resources for all beneficial uses, in a sustainable, environmentally sound, economical, and equitable manner for generations to come" (SCWA 2007). In order to achieve groundwater sustainability, the plan suggests the increased use of recycled water to offset groundwater pumping (SCWA 2007).

Napa County Groundwater Conservation Ordinance

The Napa County Groundwater Conservation Ordinance regulates extraction and use of groundwater in Napa County and prohibits extraction for wasteful or non-beneficial purposes. To obtain a groundwater permit, single-family homes with associated landscaping less than two acres in size are required to install a meter on the well serving the parcel. The meter must be read every

six months and readings must be reported to the Napa County Public Works Department. Parcels over 2 acres in size are limited to a maximum of 0.60 AFY. Agricultural developments in the groundwater–depleted MST are (see **Figure 3.3-2**) required to obtain a groundwater permit, unless specifically exempt. Permit conditions for agricultural parcels greater than two acres within the groundwater deficient area require wells have meters installed and limit the user to 0.30 AF per acre per year, calculated as a three-year average. Groundwater wells serving agricultural areas outside the MST area do not require permitting (13 Napa County Code).

Napa County issues groundwater permits for agricultural uses based on "no net increase" and "fair share" standards. The County encourages applicants to reduce their impacts on the MST basin by giving up an existing groundwater right, reducing consumption, or importing water from outside the area. If the additional water requested does not meet the "no net increase" standard, additional environmental review is required to determine the potential impacts to the basin. The "fair share" standard limits the user to 0.30 AF per acre per year (County of Napa 2005).

Local Groundwater Management Goals and Policies

County and city governments in the study area have included specific goals in their general plans to protect groundwater quantity and quality.

LGVSD

City of San Rafael General Plan

There are no specific goals or policies that pertain to groundwater in the San Rafael General Plan.

Marin Countywide Plan

> *GOAL WR-1. Healthy Watersheds*: Achieve and maintain proper ecological functioning of watersheds, including sediment transport, groundwater recharge and filtration, biological processes, and natural flood mitigation, while ensuring high-quality water.
>
> *GOAL WR-2. Clean Water*: Ensure that surface and groundwater supplies are sufficiently unpolluted to support local natural communities, the health of the human population, and the viability of agriculture and other commercial uses.
>
> *GOAL WR-3. Adequate Water for Wildlife and Humans*: Ensure that the available supply of surface and groundwater is used responsibly, so that the needs of both wildlife and human populations are met.

Novato SD

City of Novato General Plan

There are no specific goals or policies that pertain to groundwater in the City of Novato General Plan.

Marin Countywide Plan

Applicable portions of the Marin Countywide Plan are described above for LGVSD.

SVCSD

City of Sonoma General Plan

The City of Sonoma General Plan identifies the following groundwater goals and objectives:

> **Goal RC-3:** Conserve, enhance, and manage water resources, protect their quality, and assure an adequate long term supply of water for domestic, fishing, industrial and agricultural use.
>
> > *Objective RC-3.1*: Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.
> >
> > *Objective RC-3.2*: Provide development standards in recharge areas to maintain groundwater supplies.
> >
> > *Objective RC-3.3*: Preserve and enhance the quality of surface and groundwater resources.
> >
> > *Objective RC-3.4*: Insure that land uses in rural areas be consistent with the availability of groundwater resources.
>
> The following policies, in addition to those in the Land Use and Public Facilities and Services Elements, shall be used to carry out these objectives:
>
> > *RC-3a*: Grading, filling and construction should not substantially reduce or divert any stream flow that would affect groundwater recharge.
> >
> > *RC-3c*: Continue to encourage research on and monitoring of local groundwater, watersheds, streams, and aquifer recharge areas in order to determine their water supply value.
> >
> > *RC-3d*: Continue to encourage the construction of wastewater disposal systems designed to reclaim and reuse treated wastewater on agricultural crops, and for other irrigation and wildlife enhancement projects (Sonoma County 1998).

Sonoma County General Plan

The Sonoma County General Plan identifies the following groundwater goals and objectives:

> **Goal RC-3:** Conserve, enhance, and manage water resources, protect their quality, and assure an adequate long term supply of water for domestic, fishing, industrial and agricultural use.
>
> > *Objective RC-3.1*: Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.
> >
> > *Objective RC-3.2*: Provide development standards in recharge areas to maintain groundwater supplies.
> >
> > *Objective RC-3.3*: Preserve and enhance the quality of surface and groundwater resources.

Objective RC-3.4: Insure that land uses in rural areas be consistent with the availability of groundwater resources.

The following policies, in addition to those in the Land Use and Public Facilities and Services Elements, shall be used to carry out these objectives:

RC-3a: Grading, filling and construction should not substantially reduce or divert any stream flow that would affect groundwater recharge.

RC-3b: Require groundwater monitoring programs for all large scale commercial and industrial uses using wells.

RC-3c: Continue to encourage research on and monitoring of local groundwater, watersheds, streams, and aquifer recharge areas in order to determine their water supply value.

RC-3d: Continue to encourage the construction of wastewater disposal systems designed to reclaim and reuse treated wastewater on agricultural crops, and for other irrigation and wildlife enhancement projects.

RC-3e: Encourage wastewater disposal methods which minimize reliance on discharges into natural waterways. If discharge is proposed, review and comment on projects and environmental documents and request that projects maximize reclamation, conservation and reuse programs to minimize discharges and protect water quality and aquifer recharge areas.

RC-3f: The Environmental Health Department shall review all subdivisions using septic systems so that leachants do not contaminate groundwater recharge areas. Consider on-site wastewater management districts in important recharge areas.

RC-3g: Consider on-site wastewater management districts in areas with septic problems.

RC-3h: Require proof of adequate groundwater in Class III1 and IV water areas. Require test wells or the establishment of community water systems in Class IV water areas. Test wells may be required in Class III areas. Deny discretionary applications unless a geologic report establishes that groundwater supplies are adequate and will not be adversely impacted by the cumulative amount of additional development.

[1] In Sonoma County, a four-tier classification system is used to indicate general areas of groundwater availability: Class I is the major groundwater basins; Class II is major natural recharge areas; Class III is marginal groundwater availability areas; and Class IV is areas with low or highly variable water yield (Sonoma County 2007a).

Napa SD

City of Napa General Plan

The City of Napa General Plan identifies the following groundwater goals and policies:

Goal NR-4: To protect and enhance surface water and groundwater quality.

Policy NR-4.1: The City shall support the maintenance and improvement of surface and ground water quality.

Napa County General Plan

The Napa County General Plan identifies the following groundwater policies:

Policy CON-2: d) Encourage the use of recycled water, particularly within groundwater deficient areas, for vegetation enhancement, frost protection, and irrigation to enhance agriculture and grazing.

Policy CON-42: e) Promote and support the use of recycled water wherever feasible, including the use of tertiary treated water, to help improve supply reliability and enhance groundwater recharge.

Policy CON-51: Recognizing that groundwater best supports agricultural and rural uses, the County discourages urbanization requiring net increases in groundwater use and discourages incorporated jurisdictions from using groundwater except in emergencies or as part of conjunctive-use programs that do not cause or exacerbate conditions of overdraft or otherwise adversely affect the County's groundwater resources.

Policy CON-52: Groundwater is a valuable resource in Napa County. The County encourages responsible use and conservation of groundwater and regulates groundwater resources by way of its groundwater ordinances.

Policy CON-61: a) Environmentally sustainable water supply projects should receive priority attention, including development of sustainable alternative water supplies such as the use of recycled water or other options for non-potable uses in Carneros and the MST groundwater basins.

Policy CON-62: As stated in Policy AG/LU-74, the County supports the extension of recycled water to the Coombsville area to reduce reliance on groundwater in the MST groundwater basin and exploration of other alternatives. Also, the County shall identify and support ways to utilize recycled water for irrigation and non-potable uses to offset dependency on groundwater and surface waters and ensure adequate wastewater treatment capacity through the following measures:

a) Require (as part of continued implementation of County Code Title 13 Division 2 provisions associated with sewer systems) verification of adequate wastewater service for all development projects prior to their approvals. This requirement includes coordination with wastewater service purveyors to verify adequate capacity and infrastructure either exists or will be available prior to operation of the development project.

b) Use wastewater treatment and reuse facilities where feasible to reclaim, reuse, and deliver treated wastewater for irrigation and possible potable use depending on wastewater treatment standards.

c) Require proposals for non-residential construction in the Airport Industrial Area and lower Milliken-Sarco/Tulucay Creeks Area to incorporate dual plumbing to allow for the use of non potable/recycled water when such water becomes available.

d) Encourage the use of non-potable/recycled water wherever recycled water is available and require the use of recycled water for golf courses where feasible.

APPENDIX 3.4
Water Quality

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to water quality and the proposed project.

LGVSD

City of San Rafael General Plan

The City of San Rafael General Plan lists the following goals, and policies to protect the water resources in the City of San Rafael (City of San Rafael, 2004):

> *AW-7. Local, State and Federal Standards.* Continue to comply with local, state and federal standards for water quality.
>
> *AW-7a. Countywide Stormwater Program.* Continue to participate in the countywide stormwater program and comply with its performance standards.
>
> *AW-7b. Stormwater Runoff Measures.* Continue to incorporate measures for stormwater runoff control and management in construction sites.
>
> *AW-7c. Water Quality Improvements in Canal and Other Waterways*. Support water quality improvement efforts in the San Rafael Canal, creeks, and drainageways in accordance with standards of the State Water Quality Control Board or any agencies with jurisdiction.
>
> *AW-8. Reduce Pollution from Urban Runoff*. Address nonpoint source pollution and protect receiving waters from pollutants discharged to the storm drain system by requiring Best Management Practices quality.
>
> - Support alternatives to impervious surfaces in new development, redevelopment, or public improvement projects to reduce urban runoff into storm drain system, creeks, and the Bay.
> - Require that site designs work with the natural topography and drainages to the extent practicable to reduce the amount of grading necessary and limit disturbance to natural water bodies and natural drainage systems.
> - Where feasible, use vegetation to absorb and filter fertilizers, pesticides and other pollutants.

AW-8a. Proper Disposal of Pollutants. Continue to promote proper disposal of pollutants to the sanitary sewer or hazardous waste facilities rather than to the storm drainage system.

AW-8b. Compliance by Contractors. Continue to require contractors to comply with accepted stormwater pollution prevention planning practices for all projects subject to erosion potential. Also, continue to require the proper use, storage and disposal of on-site materials.

AW-8c. System Improvements. Improve storm drainage performance by constructing new system improvements. Evaluate stormwater volumes when replacing undersized or otherwise inadequate lines with larger or parallel lines.

AW-8d. Pesticide and Fertilizer Management. On City property, encourage the appropriate reduction of pesticides and fertilizers to the maximum extent feasible. Ensure that the application of pesticides on City property is accomplished in accordance with all applicable rules and regulations.

AW-8e. Public Water Management. Review areas where public water management procedures are used to convey stormwater to the stormdrain system, including streets, which also convey stormwater to the stormdrain system.

City of Novato General Plan

The City of Novato General Plan lists the following goals, policies and programs to protect the water resources in the City of Novato (City of Novato, 1996):

Goal: Preserve and improve the quality of life in Novato. Conserve and where appropriate restore the natural environment and strive for high quality in the built environment that complements the natural environment.

EN Policy 35 Watershed Management. Minimize the effects of pollution in stormwater runoff. Retain and restore where feasible the natural hydrological characteristics of watersheds in the Novato Area of Interest.

EN Program 35.1: Continue to implement the Clean Stormwater Ordinance. As budget allows, increase storm drain maintenance to reduce urban runoff pollutants and increase street sweeping programs.

EN Policy 36 Point Source Pollution. Continue to prohibit discharges of any substances other than stormwater and prevent illicit dumping of wastes into storm drains and creeks.

EN Program 36.1: Investigate reports or evidence of illicit discharges or dumping into creeks or storm drains and work with the appropriate state and local agencies to determine causes and take measures to prevent such occurrences.

*EN Policy 37 Using CEQA to Reduce Water Quality Imp*acts. Use the provisions of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion, sedimentation, and urban runoff pollution resulting from development.

EN Program 37.1: Include analysis and mitigation measures to reduce the harmful effects of runoff as part of project review.

Marin Countywide Plan

The Marin Countywide Plan lists goals and policies to protect the water resources including water quality in the County (Marin County, 2007). The following goals apply to the proposed project.

> **Goal WR-2 Clean Water**. Ensure that surface and groundwater supplies are sufficiently unpolluted to support local natural communities, the health of the human population, and the viability of agriculture and other commercial uses.
>
> > *Policy WR-2.1*: Reduce Toxic Runoff. Reduce the volume of urban runoff from pollutants — such as pesticides from homes, golf courses, cleaning agents, swimming pool chemicals, and road oil — and of excess sediments and nutrients from agricultural operations.
> >
> > *Policy WR-2.2*: Reduce Pathogen, Sediment, and Nutrient Levels. Support programs to maintain pathogen and nutrient levels at or below target levels set by the Regional Water Quality Control Board, including the efforts of ranchers, dairies, agencies, and community groups to address pathogen, sediment, and nutrient management in urban and rural watersheds.
> >
> > *Policy WR-2.3*: Avoid Erosion and Sedimentation. Minimize soil erosion and discharge of sediments into surface runoff, drainage systems, and water bodies. Continue to require grading plans that address avoidance of soil erosion and on-site sediment retention. Require developments to include on-site facilities for the retention of sediments, and, if necessary, require continued monitoring and maintenance of these facilities upon project completion.
> >
> > *Policy WR-2.4*: Design County Facilities to Minimize Pollutant Input. Design, construct, and maintain County buildings, landscaped areas, roads, bridges, drainages, and other facilities to minimize the volume of toxics, nutrients, sediment, and other pollutants in stormwater flows, and continue to improve road maintenance methods to reduce erosion and sedimentation potential.
> >
> > *Policy WR-2.5*: Take Part in Water Quality Education. Continue to support local stormwater and community watershed group efforts to inform the public about practices and programs to minimize water pollution.

Novato SD

City of Novato General Plan

The goals and policies to protect the water resources including water quality presented in the Novato General Plan described above for the LGVSD service area would also apply to activities implemented by the proposed project in the Novato SD service area.

Marin Countywide Plan

The goals and policies to protect the water resources including water quality presented in the Marin Countywide Plan described above for the LGVSD service area would also apply to activities implemented by the proposed project in the Novato SD service area.

SVCSD

City of Sonoma General Plan

The City of Sonoma General Plan lists the following goals, policies, and implementation measures to protect the water resources in the City of Sonoma (City of Sonoma 2006):

> **Goal ERE-2:** Identify, preserve, and enhance important habitat areas and significant environmental resources.
>
> > *Policy 12*: The City shall support efforts in Sonoma Valley to protect surface and groundwater resources and the valley watershed.
> >
> > *Policy 13*: Development regulations shall minimize flood hazards and maximize erosion control consistent with soil conservation practices and watershed protection.
>
> Implementation measures include:
>
> 1. Including building setback standards and preservation and restoration opportunities for creeks and creek habitats in the preparation of the Town Design Guidelines.
> 2. Establish standard conditions of project approval minimizing construction-related erosion through the use of sediment traps, seasonal grading restrictions, construction staging, and the use of groundcovers.
> 3. Work with the Sonoma Valley Watershed Council and affected agencies to develop guidelines that preserve and enhance surface and groundwater resources and the valley watershed.

Sonoma County General Plan

The Sonoma County General Plan lists goals to protect the water resources including water quality in the County (Sonoma County, 1989). The following goals apply to the proposed project.

> **Goal RC-3:** Conserve, enhance, and manage water resources, protect their quality, and assure an adequate long term supply of water for domestic, fishing, industrial and agricultural use.
>
> > *Objective RC-3.1*: Preserve watersheds and groundwater recharge areas by avoiding the placement of potential pollution sources in areas with high percolation rates.
> >
> > *Objective RC-3.2*: Provide development standards in recharge areas to maintain groundwater supplies.
> >
> > *Objective RC-3.3*: Preserve and enhance the quality of surface and groundwater resources.
> >
> > *Objective RC-3.4*: Insure that land uses in rural areas be consistent with the availability of groundwater resources.

Napa SD

City of Napa General Plan

The City of Napa General Plan lists the following goals and policies to protect the water resources in the City of Napa (City of Napa, 1995):

Goal NR-4: To protect and enhance surface water and ground water quality.

Policy NR-4.1: The City shall support the maintenance and improvement of surface and ground water quality.

Policy NR-4.2: The City shall support the maintenance and improvement of water quality in the Napa River.

Policy NR-4.3: The City shall support the monitoring and assessment of the effects of dredging in the Napa River.

Policy NR-4.4: The City shall adopt standards and regulations for the reduction and/or elimination of nonpoint sources of pollution.

Policy NR-4.5: The City shall maintain and strengthen where feasible current efforts to eliminate point sources of pollution.

Policy NR-4.6: The City shall cooperate with Napa County to maintain the current program to identify and remove leaking underground storage tanks.

Policy NR-4.7: Encourage design of projects to avoid covering creeks and drainageways whenever possible.

Napa County General Plan

The Napa County General Plan lists goals and policies to protect the water resources including water quality in the County (Napa County, 2008). The following goals apply to the proposed project.

Goal CON-8: Reduce or eliminate groundwater and surface water contamination from known sources (e.g., underground tanks, chemical spills, landfills, livestock grazing, and other dispersed sources such as septic systems).

Policy CON-47: The County shall comply with applicable Water Quality Control/Basin Plans as amended through the Total Maximum Daily Load (TMDL) process to improve water quality. In its efforts to comply, the following may be undertaken:

a) Monitoring water quality in impaired waterbodies identified by the Regional Water Quality Control Board(s).

b) Addressing failing septic systems in the vicinity of Murphy, Browns Valley, and Salvador Creeks and throughout the County, should they be found to exist.

c) Retrofitting County-maintained roads to reduce sediment caused by runoff.

d) Supporting voluntary habitat restoration and bank stabilization efforts, with particular focus on the main stem and main tributaries of the Napa River.

e) Ensuring continued effectiveness of the National Pollution Discharge Elimination System (NPDES) program and storm water pollution prevention.

f) Ensuring continued effectiveness of the County's Conservation Regulations related to vineyard projects and other earth-disturbing activities.

g) Addressing effects related to past and current mining, grazing, and other activities to the extent feasible.

h) Amending the County's Conservation Regulations or County Code to address excessive sediment delivered to waterways as required by state law, particularly as it relates to private roads and rural unimproved (i.e., dirt or gravel) roads.

i) Developing outreach and education programs to inform land owners and managers about improving surface water quality (e.g., rural and private road maintenance, soil and vegetation retention, construction site management, runoff control, etc.) and cooperating with other governmental and non-governmental agencies seeking to establish waiver or certification programs.

Goal CON-9: Control urban and rural storm water runoff and related nonpoint source pollutants, reducing to acceptable levels pollutant discharges from land-based activities throughout the county.

Policy CON-48: Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

Policy CON-49: The County shall develop and implement a water quality monitoring program (or programs) to track the effectiveness of temporary and permanent Best Management Practices (BMPs) to control soil erosion and sedimentation within watershed areas and employ corrective actions for identified water quality issues (in violation of Basin Plans and/or associated TMDLs) identified during monitoring.

APPENDIX 3.4A

Recycled Water Users in California and Microconstituents and Pharmaceuticals

This appendix provides a list of examples of recycled users throughout California and information on microconstituents and pharmaceuticals related to recycled water.

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Examples of Expanding Uses Throughout California

Growing rapidly, recycled water is used in more than 190 cities and communities throughout California. Here is a sampling of recycled water use throughout the state:

NORTHERN COAST/BAY AREA

ANGUIN: agricultural irrigation

ANTIOCH: industrial

ARCATA: freshwater marsh enhancement

BODEGA BAY: golf course, landscape irrigation

CALISTOGA: vineyard, landscape, and golf course, agricultural irrigation

CONCORD: golf course, landscape irrigation

CRESCENT CITY: landscape irrigation

DALY CITY: golf course, landscape irrigation

DUBLIN: landscape, park, school, and median irrigation

FAIRFIELD: agricultural irrigation

FERNDALE: pasture irrigation

FORT BRAGG: vineyard, landscape irrigation

GILROY: flower and vegetable seed, Christmas tree farm, and landscape irrigation

GUALALA: landscape irrigation

HAYWARD: golf course irrigation and wildlife habitat enhancement

LAKEPORT: pasture irrigation

MARTINEZ: landscape irrigation, industrial irrigation,wildlife habitat enhancement

MCKINLEYVILLE: agricultural irrigation

MILL VALLEY: landscape irrigation

MILPITAS: landscape irrigation

MONTAGUE: agricultural irrigation

MOUNTAIN VIEW: wildlife habitat enhancement

MORGAN HILL: flower and vegetable seed, Christmas tree farm, and landscape irrigation

NAPA: parks, cemeteries, vineyard and golf course irrigation

NOVATO: golf course, pasture and agricultural irrigation

OAKLAND: landscape, golf course, median, and freeway irrigation

PALO ALTO: golf course, landscape irrigation

PETALUMA: agricultural, landscape, tree and pasture irrigation

PLEASANTON: landscape irrigation

PLEASANT HILL: landscape, golf course irrigation

RED BLUFF: freeway & landscape irrigation

REDDING: wash down log decks & school, landscape, and pasture irrigation

RICHMOND: cooling tower, industrial and landscape irrigation, golf course

ROHNERT PARK: golf course, school, park, and landscape irrigation

SANTA CLARA: landscape, golf course, park, school, median, and cemetery irrigation

SAN FRANCISCO: golf course and landscape irrigation

SAN JOSE: golf course, park, school, and median landscaping, industrial cooling, landscape, agricultural irrigation

SAN LEANDRO: landscape, median, and golf course irrigation

SAN LORENZO: landscape irrigation

SAN MATEO: agricultural irrigation

SAN RAFAEL: schoolyard, landscape, cemetery, cooling tower, industrial, and agricultural irrigation, toilet flushing, car washes

SAN RAMON: landscape, park, school, and median landscaping

SANTA ROSA: greenbelt, golf course, crop, vineyard, landscape, pasture and agricultural irrigation, geothermal well field recharge

SCOTTS VALLEY: Large landscape irrigation including parks and schools

SMITH RIVER: agricultural irrigation

SONOMA: crop, vineyard, blueberry and other agricultural irrigation, landscape irrigation, wildlife habitat enhancement

ST HELENA: vineyard, landscape, and golf course irrigation

SUNNYVALE: landscape, golf course, park, and school irrigation

SUSANVILLE: alfalfa irrigation

TERRA LINDA: Parks, athletic fields, public landscaping

TIBURON: landscape irrigation

UNION CITY: wildlife habitat enhancement

WEED: agricultural irrigation

WESPORT: agricultural irrigation

WILLITS: agricultural irrigation

WINDSOR: residential landscape irrigation, agricultural and landscape irrigation

YOUNTVILLE: agricultural irrigation

CENTRAL COAST

ATASCADERO: golf course, landscape irrigation

CAMBRIA: fodder feed for a cattle operation

CARMEL: golf course, park, landscape irrigation

CASTROVILLE: artichoke and other food crops irrigation

DAVENPORT: Brussels sprouts irrigation

CARMEL: landscape irrigation and wildlife habitat enhancement

GOLETA: golf course, agricultural and landscape irrigation

GUADALUPE: pasture, landscape irrigation

LOMPOC: corn and agricultural irrigation

MISSION HILLS: agricultural irrigation

MONTEREY: golf course, park, landscape and agricultural irrigation

SAN LUIS OBISPO: golf course, crop, landscape and agricultural irrigation

SANTA BARBARA: landscape and agricultural irrigation, golf course, park, schools, freeway median landscaping, hotel landscaping, zoo landscaping, cooling towers.

SANTA CRUZ: industrial, landscape and agricultural irrigation

SANTA MARIA: pasture & agricultural irrigation

SOLVANG: pasture and agricultural irrigation

UPLANDS: landscape irrigation

WATSONVILLE: artichokes, lettuce and other food crops and landscape irrigation

CENTRAL VALLEY

AUBURN: agricultural irrigation

BAKERSFIELD: fiber, fodder, and grain crop irrigation, hay irrigation, golf course irrigation

CERES: landscape irrigation

COALINGA: crop irrigation

CHOWCHILLA: cotton irrigation

CORCORAN: alfalfa and corn irrigation

DELANO: alfalfa and grain irrigation

EXETER: plum irrigation

FARMERSVILLE: pasture irrigation

FRESNO: wine grape irrigation, alfalfa and other crop irrigation, landscape irrigation

GALT: pasture irrigation

GRASS VALLEY: agricultural irrigation

HANFORD: cotton irrigation

LEMOORE: cotton and fodder irrigation

LINCOLN: agricultural irrigation

LIVERMORE: golf course, landscape, and freeway irrigation and fire protection

LODI: corn and other agricultural irrigation, boiler feed at power plant, fish rearing ponds

LOS BANOS: pasture irrigation

LOYALTON: agricultural irrigation

MADERA: crop, golf course, pasture irrigation

MANTECA: orange groves, dairy feed alfalfa, and corn and agricultural irrigation

MERCED: wetland/wildlife habitat enhancement

MODESTO: agricultural irrigation

OROVILLE: cooling tower

PATTERSON: agricultural irrigation

PORTERVILLE: alfalfa and landscape irrigation

RANCHO MURIETA: landscape irrigation

ROSEVILLE: landscape, golf course irrigation

SELMA: cotton, wheat, plum orchard irrigation

TAFT: alfalfa irrigation

TULARE: crop and landscape irrigation

TURLOCK: agricultural irrigation

WASCO: alfalfa, cotton, sugar beet irrigation

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Examples of Expanding Uses Throughout California

SIERRA/SIERRA FOOTHILLS

AMADOR: pasture irrigation

ANGEL'S CAMP: pasture, landscape irrigation

CALIFORNIA CITY: landscape irrigation

EDWARDS AIR FORCE BASE: landscape irrigation

EL DORADO HILLS: golf course and landscape irrigation

GROVELAND: golf course, landscape irrigation

JAMESTOWN: landscape, crop, pasture and other agricultural irrigation

MARYSVILLE: landscape irrigation

RIDGECREST: landscape irrigation

SOUTH LAKE TAHOE: pasture, landscape irrigation

SUSANVILLE: agricultural irrigation

TUOLUMNE: agricultural irrigation

SOUTHERN CALIFORNIA

ANTELOPE VALLEY: park irrigation and recreational ponds

BARSTOW: alfalfa other agricultural irrigation

BIG BEAR: agricultural irrigation

BISHOP: pasture and landscape irrigation

BURBANK: power plant cooling, landscape, park, school, freeway median landscaping

CALABASAS: park, median, freeway, school, golf course, landscape irrigation

CALIPATRIA: wildlife habitat

CAMARILLO: lemons and seed, landscape, and pasture irrigation

CAMP PENDLETON: golf course and landscape irrigation

CARDIFF: landscape irrigation, other mixed types

CARLSBAD: crop and landscape irrigation, groundwater recharge from Encina WRP

CERRITOS: (from LACSD Los Coyotes WRP)

CITY OF INDUSTRY: LACSD San Jose WRP

CITY OF OCEANSIDE

CITY OF ESCONDIDO

COACHELLA VALLEY: landscape and agricultural irrigation

CORONA: landscape irrigation

COSTA MESA: golf course, landscape irrigation

CRESTLINE: agricultural, landscape, and industrial irrigation

DANA POINT: landscape, school, median irrigation and streetscapes

DEATH VALLEY: golf course irrigation

DEL MAR: landscape irrigation

EL SEGUNDO: golf course, landscape irrigation

ELSINORE: landscape irrigation, wildlife habitat enhancement, lake stabilization water

ENCINITAS: agricultural irrigation

ESCONDIDO: industrial, landscape, and crop irrigation, recreational impoundment

FALLBROOK: agricultural, landscape irrigation

FOUNTAIN VALLEY: seawater barrier

GOLETA: toilet flushing, large landscape irrigation, including parks and schools

GLENDALE: golf course, cemetery, freeway irrigation, landscape, industrial & cooling tower, LA-Glendale WRP

INDIAN HILLS: agricultural irrigation, wildlife habitat

INDIO: crop and fodder irrigation

INGLEWOOD: park, median, freeway, school, golf course, cemetery, landscape irrigation

INLAND EMPIRE: agricultural, landscape, industrial irrigation, and other mixed types

IRVINE: golf course, landscape, agricultural irrigation, and other mixed types

IRVINE RANCH WATER DISTRICT: Tustin, Los Alisos and Newport Beach are all part of IRWD system serving agricultural irrigation, golf courses, landscape, commercial cooling towers, toilet flushing & industrial applications.

LA CANADA FLINTRIDGE: LACSD Lanterman Plant, golf course irrigation

LAGUNA BEACH: golf course and nursery plant irrigation, landscape irrigation

LAGUNA NIGUEL: landscape irrigation

LAGUNA HILLS: golf course and landscape irrigation

LAKE ARROWHEAD: crop irrigation

LAKESIDE: agricultural irrigation

LANCASTER: wildlife refuge, recreational impoundment, agricultural and landscape irrigation

LONG BEACH: LACSD Long Beach WRP, irrigation and industrial for THUMS Islands, golf course, landscape, park, playground, school, and freeway irrigation

LOS ANGELES: golf course, landscape, freeway, school, park, and cemetery irrigation, concrete mix, water for carpet dying, fire protection, and dust control

LOS ANGELES COUNTY: joint recharge project with WRD using LACSD San Jose Creek and Whittier Narrows effluent

LOS ANGELES MUNICIPAL WATER DISTRICT: LACSD San Jose Creek WRP,

MISSION VIEJO: landscape irrigation

MORENO VALLEY: landscape irrigation

NEWPORT BEACH: golf course, freeway, school, park, and landscape irrigation

OCEANSIDE: landscape irrigation and wetland/wildlife enhancement

ORANGE: industrial, agricultural, and landscape irrigation

ORANGE COUNTY: Joint OCWD & OCSD groundwater replenishment system, recharge project & seawater barrier

PALMDALE: crop and agricultural irrigation, Christmas tree farm irrigation

PALM DESERT: golf course, landscape irrigation

PALM SPRINGS: golf course, landscape, park, schools, freeway, and median landscaping

PERRIS VALLEY: agricultural irrigation

POMONA: Paper manufacturing, dust control, and park, playground, school, cooling tower, golf course, strawberry, freeway, and landscape irrigation

RIVERSIDE: golf course, landscape and crop irrigation

ROWLAND WATER DISTRICT: LACSD Pomona WRP & San Jose Creek WRP

SAN BERNARDINO: steel plant cooling, golf course, agricultural and landscape

SAN CLEMENTE: golf course, landscape, and agricultural irrigation

SAN DIEGO: landscape, golf course, parks, school, median, and industrial irrigation, wildlife habitat, other mixed types

SAN ELIJO: landscape irrigation, other mixed types

SAN JACINTO: agricultural irrigation

SANTA MARIA: agricultural irrigation

TEMECULA: agricultural, landscape irrigation

TUSTIN: other mixed types

TWENTYNINE PALMS: golf course and landscape irrigation

UPLAND: golf course, landscape irrigation

UPPER SAN GABRIEL VALLEY MWD: LACSD San Jose Creek WRP, landscape irrigation & groundwater recharge

VENTURA: food crops, landscape irrigation, and golf course irrigation

VICTORVILLE: golf course

VICTOR VALLEY: industrial irrigation

WALNUT VALLEY WATER DISTRICT: LACSD Pomona WRP

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA: seawater barrier program; West Basin MWD - Hyperion effluent treated for landscape, industrial uses, boiler feed water & seawater barrier

NORTH BAY WATER REUSE AUTHORITY

Sustainability Through Cooperative Water Recycling

500 Davidson Street, Novato, CA 94945 • 707-547-1923 • NBWRA.org • info@nbwra.org • NBWRA.org

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Use on Landscapes, Schoolyards, Playgrounds, Parks, Golf Courses

MONITORING HEALTH AND SAFETY.
Scientific researchers continue their studies to assure the safety of recycled water for human and environmental uses. In over 70 years of recycled water use in California, there have been no documented instances of human harm from contact with recycled water. Recycled water is not used for drinking water in the North Bay Water Recycling Program.

SAFETY ON LANDSCAPES, PLAYGROUNDS, SCHOOLYARDS. Recycled water has been used for landscape irrigation for more than 70 years. Today, there are more than 1,600 individual park, playground and schoolyard sites being irrigated with recycled water in the United States. California and Florida each have almost 700 playground or schoolyard sites irrigated with recycled water.

NO KNOWN HEALTH RISKS. Landscape irrigation with recycled water is widespread in the U.S.; at the 1,600 park, playground and schoolyard sites mentioned above, for example, there have been no known incidences of illnesses or diseases from either microbial pathogens or chemical contamination resulting from the use of recycled water. Highly treated and disinfected recycled water can be considered safe for those uses, and does not present any known health risks to children or adults.

SAFEGUARDS IN PLACE. California enforces comprehensive rules to assure the safety of recycled water. The use is strictly controlled, including: prohibition of runoff of recycled water; setback distances from domestic water supply wells; restrictions on the time of irrigation; protection of water fountains from recycled water spray; color coding of all recycled water pipelines and valves; and signs noting that the water is not suitable for drinking.

These detailed safeguards are supported by requirements on the processing and handling of recycled water. Treatment plants must install alarms and similar controls. Workers require professional training and certification.

Napa Valley College Sports Fields Irrigated with Recycled Water

"Recycled water service in lieu of 16 million gallons of potable water each year has been well received by the campus community."

Dean TerAvest, Director of Campus Planning and Construction, Napa Valley College

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Use on Landscapes, Schoolyards, Playgrounds, Parks, Golf Courses

BURBANK	City of Burbank WRP	1	Park & Playground	1	School Ground
EL DORADO	El Dorado Irrigation District	–	Parks & Playgrounds	3	School Grounds
FRESNO	Quail Lakes WWTP	–	Parks & Playgrounds	1	School Ground
MADERA	Golden Valley High School WWTP	–	Parks & Playgrounds	1	School Ground
MARIN	Las Gallinas Valley WRP – Marin MWD	12	Parks & Playgrounds	8	School Grounds
MONTEREY	Carmel TP – Carmel Area WWD	2	Parks & Playgrounds	1	School Ground
NAPA	City of Calistoga Dunaweal WTP	1	Park & Playground	1	School Ground
	Napa Sanitation District	4	Parks & Playgrounds	5	Athletic Fields
LOS ANGELES	County Sanitation Districts / LAC	94	Parks & Playgrounds	90	School Grounds
	Las Virgenes MWD – Tapia WRP	14	Parks & Playgrounds	11	School Grounds
	Los Angeles-Glendale WRP	1	Park & Playground	2	School Grounds
	West Basin MWD – West Basin WRP	42	Parks & Playgrounds	36	School Grounds
ORANGE	OCWD Green Acres TP	9	Parks & Playgrounds	3	School Grounds
	Moulton Niguel WD Joint Regional TP	22	Parks & Playgrounds	10	School Grounds
	Moulton Niguel WD PLA	8	Parks & Playgrounds	1	School Ground
	IRWD	75	Parks & Playgrounds	40	School Grounds
	South Coast WD	8	Parks & Playgrounds	1	School Grounds
	Santa Margarita WD	20	Parks & Playgrounds	10	School Grounds
PLACER COUNTY	Roseville Dry Creek WETP	2	Parks & Playgrounds	–	School Grounds
RIVERSIDE	Coachella Valley WD	–	Parks & Playgrounds	1	School Ground
	Desert Water Agency WRF	1	Park & Playground	1	School Ground
	Eastern MWD	–	Parks & Playgrounds	1	School Ground
	Rancho California WD	1	Park & Playground	3	School Grounds
SACRAMENTO	Sacramento Regional CSD	7	Parks & Playgrounds	3	School Grounds
SAN BERNARDINO	IEUA	3	Parks & Playgrounds	–	School Grounds
SAN DIEGO	Fallbrook PUD WTP #1	–	Parks & Playgrounds	1	School Ground
	Otay WD	2	Parks & Playgrounds	2	School Grounds
	Padre Dam MWD	6	Parks & Playgrounds	10	School Grounds
	San Diego North City WRP	6	Parks & Playgrounds	1	School Ground
	Vallecitos WD	2	Parks & Playgrounds	1	School Ground
SANTA BARBARA	Goleta SD	1	Park & Playground	3	School Grounds
	Santa Barbara El Estero WRF	16	Parks & Playgrounds	7	School Grounds
SANTA CLARA	Gilroy and Morgan Hill STP	1	Park & Playground	–	School Grounds
	Palo Alto Regional WRP	2	Parks & Playgrounds	–	School Grounds
	San Jose/Santa Clara WPCP	27	Parks & Playgrounds	20	School Grounds
	Sunnyvale WWTP	1	Park & Playground	–	School Grounds
SANTA CRUZ	Scotts Valley WD	–	Parks & Playgrounds	2	School Grounds
TOTALS:		391	PARKS & PLAYGROUNDS	281	SCHOOL GROUNDS

NORTH BAY WATER REUSE AUTHORITY
Sustainability Through Cooperative Water Recycling
500 Davidson Street, Novato, CA 94945 • 707-547-1923 • NBWRA.org • info@nbwra.org • NBWRA.org

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Microconstituents and Pharmaceuticals

Microconstituents are extremely small amounts of chemical compounds that occur in the environment, including in recycled water. Many of these substances are not new. They have probably been in the environment for many decades due to industrialization, but have been recently discovered due to advances in laboratory techniques that makes it possible to detect substances in the parts per billion or even per trillion range.

FOUND THROUGHOUT THE ENVIRONMENT. Microconstituents originate as a result of commercial, industrial and general public use of a variety of chemicals, such as medications, personal care products, hormones, steroids and pesticides. Scientists have discovered over 80,000 substances that occur at very low levels in the environment.

The presence of microconstituents in recycled water is low compared to some other common sources. For example, there is over a thousand times more estrogen in a glass of cow's milk than there is in recycled water. There are even more benzene and flame retardants in the air we breathe than in some bottled water. The wastewater treatment process that is the foundation of recycled water does not increase the amount of micro constituents in the environment.

One part per trillion is equivalent to 1 drop of water diluted into 20 two-meter-deep Olympic-size swimming pools, or one second of time in approximately 31,700 years.

PHARMACEUTICALS. There has been a great deal of interest recently regarding human health effects associated with pharmaceuticals, hormones and other organic wastewater contaminants. It should be emphasized that recycled water for irrigation is not used for drinking, virtually eliminating the likelihood of a health threat. A review of scientific information developed so far does not provide information on whether or not pharmaceuticals and chemicals in personal care products become concentrated in vegetation or soil through irrigation with recycled water. Drugs detected in the environment occur in very small amounts—in billionths or trillionths per each part of water. Many do not persist for long in the environment, and do not appear to pose an acute risk. Moreover, nearly all pharmaceuticals and personal care products are non-volatile, and do not escape from recycled water into the atmosphere.

EXTREMELY LOW TO UNASSIGNABLE RISK. Potential health effects for humans from exposure to microconstituents at concentrations detected in recycled water is not scientifically known but the risk is suspected to be extremely low to unassignable. In testimony to the U.S. Senate Subcommittee on Transportation, Safety, Infrastructure Security and Water Quality on April 15, 2008, Dr. Shane Snyder pointed out that the highest microconstituents detected in the U.S. drinking water to date was at a concentration approximately 5,000,000 times lower that the therapeutic dose. When applying the most conservative safety factors and the most susceptible population, the concentrations of microconstituents found in drinking water were several orders of magnitude lower than levels that might pose a public health hazard. The concentrations found would allow consumption of 50,000 eight-ounce glasses of water per day without any health effects. While concentrations found in recycled water might be higher for some microconstituents than those found in potable water, the same relative analogy holds.

WHAT YOU SHOULD KNOW ABOUT RECYCLED WATER

Recycled Water—Microconstituents and Pharmaceuticals

SUMMARY. No health issues have been reported from proper use of recycled water following decades of use throughout California and the United States. Recycled water is appropriate as a sustainable substitute for potable water that is currently used for urban and agricultural irrigation. Also, under the North Bay Water Recycling Program, recycled water would not be used for drinking. There is no evidence that recycled water is detrimental to humans or the environment when used for agricultural uses, parks, golf courses, pubic landscaping, wetlands habitat restoration and other environmental water needs. The state of current scientific opinion leans toward no known adverse human effects and possible effects to aquatic life with dozens of studies currently underway. We will continue to monitor them for new information as it becomes available. And, we will of course continue to follow all regulations for using recycled water.

No Drugs Down the Drain

HELP US KEEP MICROCONSTITUENTS OUT OF THE ENVIRONMENT

One of the best ways to limit the amount of microconstituents in the environment is to stop them from entering in the first place. The members of North Bay Water Reuse Authority help sponsor or promote programs for safe collection and disposal of pharmaceuticals and household hazardous waste. Contact your local agency for more information.

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APPENDIX 3.4B
Potential Recycled Water Users in the Novato Area

The following customers would receive greater than 10 acre-feet per year (AFY) of recycled water for irrigation in the Novato area:

U.S. Coast Guard at Hamilton Air Force Base – 1 at 105 AFY in the South service zone represents 11.5% of the anchor users.

Caltrans Highway Irrigation – 2 at 97 AFY future usage in the Central service zone represents 10.6% of the anchor users.

County of Marin – 1 at 53 AFY is used by the Stafford Lake County Park in the West service zone and represents 5.8% of the anchor users. This park is not appropriate for recycled water use since it is tributary to Stafford Lake which is used in NMWD's potable water supply.

City of Novato – 4 at 73 AFY in the Central and South service zones represents 8% of the anchor users.

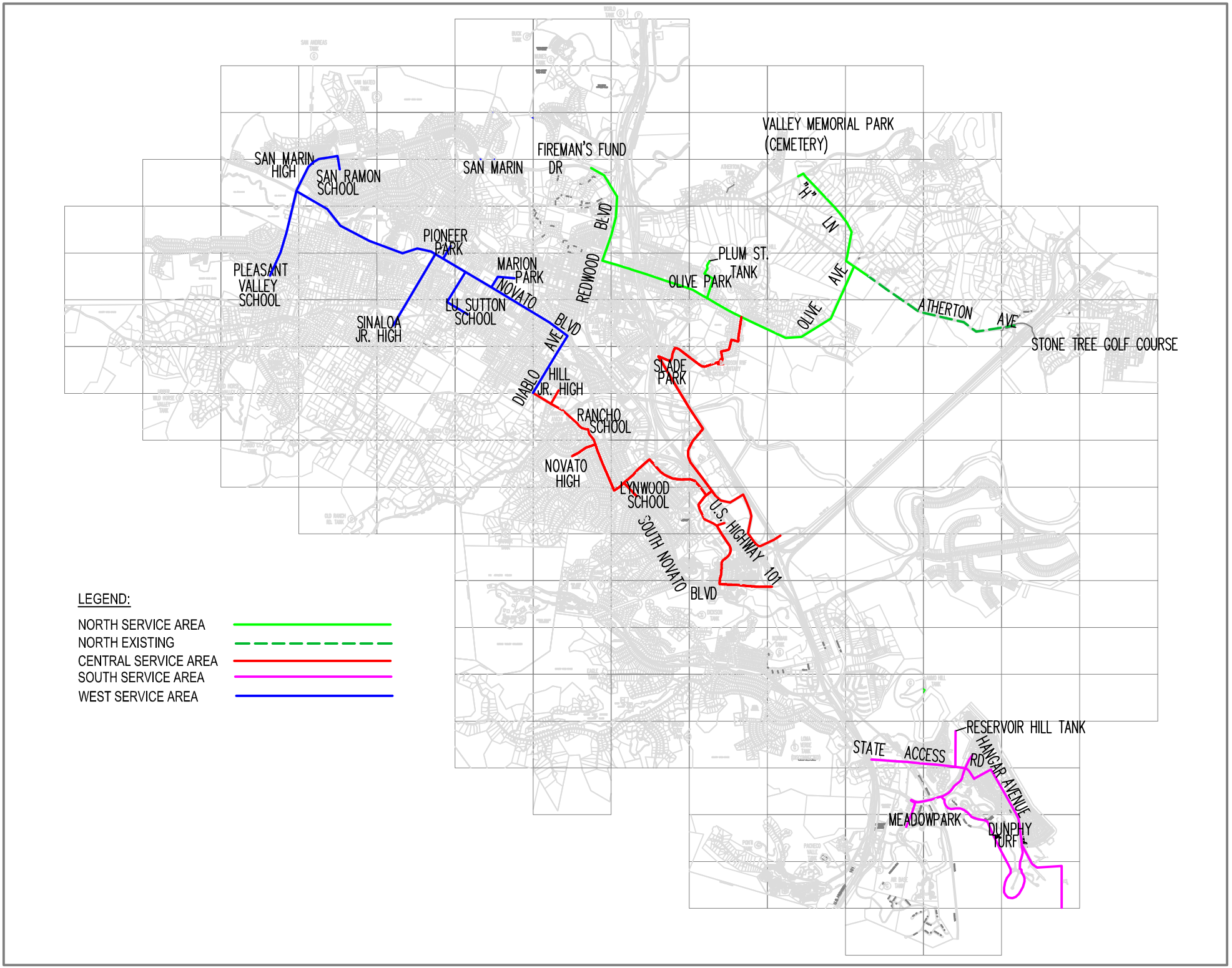
Novato Unified School District – 10 at 180 AFY in the Central, South and West service zones represents 20% of the anchor users. The Novato High School and San Marin High School will have water use reductions due to artificial turf installation. The estimated water use reduction based on a smaller irrigation area is approximately 15%.

Commercial Users – 4 at 188 AFY in the North, Central and South service zones represents 20% of the anchor users.

Homeowners Associations – 10 at 210 AFY in the Central, South and West service zones represents 23% of the anchor users.

The two largest irrigation water customers in the District are the US Coast Guard at HAFB in the South service area and Fireman's Fund in the North service area.

The locations of potential users that would receive greater than 10 AFY of recycled water is shown in attached figure.


VALLEY MEMORIAL PARK
(CEMETERY)
FIREMAN'S FUND
SAN MARIN
SAN MARIN
HIGH
SAN RAMON
SCHOOL
"H"
LN
PIONEER
PARK
REDWOOD
BLVD
PLUM ST.
TANK
OLIVE PARK
OLIVE
AVE
ATHERTON
AVE
STONE TREE GOLF COURSE
PLEASANT
VALLEY
SCHOOL
MARION
PARK
NOVATO
BLVD
LU SUTTON
SCHOOL
SINALOA
JR. HIGH
DIABLO
AVE
HILL
JR. HIGH
SLADE
PARK
RANCHO
SCHOOL
NOVATO
HIGH
LYNWOOD
SCHOOL
U.S. HIGHWAY 101
SOUTH NOVATO
BLVD
RESERVOIR HILL TANK
STATE
ACCESS
RD
HANGAR AVENUE
MEADOWPARK
DUNPHY
TURF
LEGEND:
NORTH SERVICE AREA
NORTH EXISTING
CENTRAL SERVICE AREA
SOUTH SERVICE AREA
WEST SERVICE AREA

APPENDIX 3.5
Biological Resources

Local

The regulatory mechanisms for regional oversight of natural resources in the LGVSD area stem from policies contained in the Marin Countywide Plan (Marin County, 2007). Relevant goals, objectives and policies from the General Plan pertinent to wetlands and biological resource conservation issues in the project area are presented below.

City of San Rafael General Plan

The regulatory mechanisms for regional oversight of natural resources in the Peacock Gap area stem from policies contained in the City of San Rafael General Plan (Marin County, 2007). General Plan goals include protecting habitat (Goal 31) via policies such as preserving wetlands; restoring tidal influences; restricting riparian access; retaining trees and riparian corridors; protecting sensitive habitats and enhancing steelhead habitat; preserving oak woodland; preserving wildlife movement corridors; and landscaping with native plants.

City of San Rafael Municipal Code – Tree Ordinance

The City of San Rafael protects trees through measures outlined in Municipal Code Chapter 11.12, which requires a permit for alteration and removal of trees upon or along any public street, sidewalk or walkway in the city. During the erection or repair of any building or structure, the code calls for protective guards to be placed around all nearby trees to prevent injury.

City of San Rafael General Plan

GOAL 31: Protected Habitat. It is the goal of San Rafael to have enhanced habitat for native plants and animals, and special protection for species that are listed as threatened or endangered. San Rafael is rich in wildlife and native plant habitats, such as wetlands, creeks, shorelines, oak woodlands and riparian areas, as well as wildlife corridors between them, and these habitats are being protected or restored as necessary.

Policy CON-1. Protection of Environmental Resources.

- Protect or enhance environmental resources, such as ridgelines, wetlands, diked baylands, creeks and drainageways, shorelines and habitat for threatened and endangered species.

Program CON-1a. Plans for Environmental Protection.

- Complete the implementation of Mahon Creek Final.
- Conceptual Plan and the Shoreline Park Master Plan.

Policy CON-2. Wetlands Preservation.

- Require appropriate public and private wetlands preservation, restoration and/or rehabilitation through compensatory mitigation in the development process for unavoidable impacts. Support and promote acquisition of fee title and/or easements from willing property owners.

Program CON-2a. Wetlands Overlay District.

- Continue to implement wetlands policy through the Wetlands Overlay zoning district and development review.

Policy CON-3. Unavoidable Filling of Wetlands.

- Loss of wetlands due to filling should be avoided. Any request for fill must demonstrate that the proposed fill cannot be avoided. If fill is unavoidable, there shall be a compensatory minimum of 2:1 ratio of wetlands created or restored, onsite or off-site. The City may waive this policy for fill of a small (0.1 acre or less), hydrologically isolated wetland (surface water) or drainageway provided that the wetland or drainageway is not within or connected to historic drainages and provided that the applicant is in compliance with requirements of other agencies that regulate wetlands.

Program CON-3a. Project Mitigation.

- Continue the City's practice of requiring mitigation for projects that would affect wetlands, in conjunction with recommendations of State and Federal agencies.

Policy CON-4. Wetland Setbacks.

- Maintain a minimum 50-foot development-free setback from wetlands, including, but not limited to, paving or structures. Setbacks of greater than 50 feet may be required on lots of two or more acres as determined through development review. The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the wetland to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

Policy CON-5. Diked Baylands.

- Protect seasonal wetlands and associated upland habitat contained within undeveloped diked baylands, or restore to tidal action. Support and promote acquisition from willing property owners.

Policy CON-6. Creek and Drainageway Setbacks.

- Require development-free setbacks, except for specific access points as approved per policy

Policy CON-7 (Public Access to Creeks), from existing creeks and drainageways that will maintain the functions and resulting values of these habitats.

- Appropriate erosion control and roadway crossings may encroach into the development setback. In the absence of vegetation promote new growth of natural habitat.

The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

Program CON-6a. Municipal Code Compliance.

- Ensure that the San Rafael Municipal Code complies with local, state, and federal regulatory agencies requirements for erosion control.

Policy CON-7. Public Access to Creeks.

- Provide pedestrian access to points along creeks throughout the City where such access will not adversely affect habitat values.

Program CON-7a. Creek Access Points.

- Proactively identify and create desirable access points to creeks on public lands.

Program CON-7b. Public Access.

- Through the development review process, identify and secure areas appropriate for access points to creeks.

Program CON-7c. Website Publicity.

- Use the City's website to publicize information about protecting and accessing San Rafael's creeks and waterways.

Program CON-7d. Creek Signage.

- Develop a program to provide attractive signage identifying creeks.

Policy CON-8. Enhancement of Creeks and Drainageways.

- Explore enhancement of, and support continuous upgrades to, drainageways to serve as wildlife habitat corridors for wildlife movement and to serve as flood control facilities to accommodate storm drainage. Require creek enhancement and associated riparian habitat restoration/creation for projects adjacent to creeks to maintain storm flows, reduce erosion and maintenance and improve habitat values, where feasible.

Program CON-8a. Creek Restoration.

- Encourage and support efforts by neighborhood associations, environmental organizations and other interested groups to fund creek enhancement, restoration and maintenance programs.

Program CON-8b. Tree Retention.

- Retain trees along creeks, where possible, for preservation of riparian habitat and to inhibit growth of algae.

Policy CON-9. Native and/or Sensitive Habitats.

- Protect habitats that are sensitive, rare, declining, unique or represent a valuable biological resource.

Program CON-9a. Steelhead Habitat.

- Support efforts to restore, preserve or enhance Central California Coast Steelhead habitat in Miller Creek and other creeks.

Program CON-9b. Feral Cats.

- To protect habitats, especially for birds and small animals, continue to fund programs of the Marin Humane Society including those to reduce the population of feral cats.

Policy CON-10. Impacts to Sensitive Habitats.

- Minimize impacts to sensitive natural habitats through careful planning. Require compliance with applicable laws and regulations.

Program CON-10a. Oak Savanna/Woodland Habitat Protection.

- Require that proposed developments with potential impacts to oak savanna/woodland habitat to either avoid, minimize, or compensate for the loss of oak savanna/woodland habitat. Avoidance would be the preferred measure where feasible. If it is deemed that an impact is unavoidable, minimization of direct and indirect impacts or compensation through habitat restoration, creation, or enhancement would be required.

Policy CON-11. Wildlife Corridors.

- Preserve and protect areas that function as wildlife corridors, particularly those areas that provide natural connections permitting wildlife movement between designated sensitive habitats.

Policy CON-13. Threatened and Endangered Species.

- Preserve and protect threatened and endangered species of plants and animals formally listed consistent with the state and federal endangered species acts including protection of their habitat.

Program CON-13a. List of Species.

- Maintain a current list of threatened and endangered and special status species.

Policy CON-14. Special Status Species.

- Preserve and protect special status plants and animals, including candidate species for listing under the state and federal endangered species acts, California species of special concern, California Native Plant Society List 1B plants, and other species protected under provisions of California Fish and Game Code.

Program CON-14a. Surveys.

- Require that vacant sites be surveyed for the presence or absence of relevant special status species prior to development approval.

Program CON-14b. Minimization.

- Require that where impacts to special status species are deemed unavoidable, potential impacts to the identified species are minimized through design, construction, and operation of the project. Compensation measures could include on-site set asides or off-site acquisitions (e.g. conservation easements, deed restrictions, etc.) that would be required if project impacts result in direct loss or indirect impacts that cannot be mitigated in other ways. This might also involve species-specific enhancement restoration efforts for the mitigation lands.

Policy CON-15. Invasive Non-Native Plant Species.

- Remove and control selected undesirable invasive non-native plant species from Cityowned open space and road right of ways, and encourage the removal and control of these invasive plant species from non-City owned ecologically-sensitive areas.

Program CON-15a. Invasive Plant Ordinance.

- Consider the legality, feasibility and enforceability of an Invasive Plant Ordinance addressing the removal of invasive species on private and public properties. As part of the ordinance, evaluate the benefits and impacts of using herbicide on invasive species where there are no other feasible controls.

Program CON-15b. Removal of Invasive Species on Public Property.

- Institute a program to remove invasive plant species on public properties. Consider the use of volunteers and private organizations to assist in this effort.

Policy CON-16. Landscape with Native Plant Species.

- Encourage landscaping with native and compatible non-native plant species, especially drought-resistant species.

Program CON-16a. Distribution of Information.

- Distribute Marin Municipal Water District and other organizations' educational materials about native plant landscaping.

Marin Countywide Plan

The regulatory mechanisms for regional oversight of natural resources in the LGVSD area stem from policies contained in the Marin Countywide Plan (Marin County, 2007). General Plan goals include enhancing native habitat and biodiversity (Goal BIO-1); protecting sensitive biological resources (Goal BIO-2); conserving wetlands (Goal BIO-3); Conserving riparian corridors (Goal BIO-4); and conserving baylands (Goal BIO-5). Policies established under these goals include protecting habitat for special-status species and sensitive natural communities; preserving wildlife movement corridors; protecting woodlands and trees; landscaping with native plants; developing habitat monitoring programs and maintaining a natural resources information program; preparing a county stream map; and protecting wildlife nursery areas and sensitive coastal habitat.

Marin County Code Chapter 22.27 protects and preserves native trees in the non-agricultural unincorporated areas of Marin County through permit requirements and limited tree removal. A

long list of protected trees appears in the Native Tree Preservation and Protection Ordinance, included in Appendix 3.5. Mitigation may include: establishment and maintenance of replacement trees onsite; for large properties, a management plan which designates areas of the property for preservation; removal of invasive exotic species; the posting of a bond to cover inspection costs associated with the described measures; and/or a payment of $100 per tree to be deposited into the Tree Replacement Fund managed by the Marin County Open Space District for planting and maintenance of trees and other vegetation.

Marin County General Plan

GOAL BIO-1: Enhanced Native Habitat and Biodiversity. Effectively manage and enhance native habitat, maintain viable native plant and animal populations, and provide for improved biodiversity throughout the County.

Policy BIO-1.1 Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.

- Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.

Policy BIO-1.2 Acquire Habitat.

- Continue to acquire areas containing sensitive resources for use as permanent open space, and encourage and support public and private partnerships formed to acquire and manage important natural habitat areas, such as baylands, wetlands, coastal shorelines, wildlife corridors, and other lands linking permanently protected open space lands.

Policy BIO-1.3 Protect Woodlands, Forests, and Tree Resources.

- Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.

Policy BIO-1.4 Support Vegetation and Wildlife Disease Management Programs.

- Support agency programs and proven methods to limit the impacts of Sudden Oak Death syndrome and any other diseases harmful to native vegetation and wildlife in Marin County, while addressing any potential adverse effects on sensitive resources.

Policy BIO-1.5 Promote Use of Native Plant Species.

- Encourage use of a variety of native or compatible nonnative, non-invasive plant species indigenous to the site vicinity as part of project landscaping to improve wildlife habitat values.

Policy BIO-1.6 Control Spread of Invasive Exotic Plants.

- Prohibit use of invasive species in required landscaping as part of the discretionary review of proposed development. Work with landowners, landscapers, the Marin County Open Space District, nurseries, and the multi-agency Weed Management Area to remove and prevent the spread of highly invasive and noxious weeds. Invasive plants are those plants listed in the State's Noxious Weed List, the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California," and other priority species identified by the agricultural commissioner and California Department of Agriculture. Species of particular concern include the following: barbed goatgrass (Aegilops triuncialis), giant reed (Arundo donax), Italian thistle (Carduus pycnocephalus), distaff thistle (Carthamus lanatus), purple starthistle (Centaurea calcitrapa), yellow starthistle (Centaurea solstitialis), pampas grass (Cortaderia selloana), Scotch broom (Cytisus scoparius), Cape ivy (Delairea odorata), oblong spurge (Euphorbia oblongata), fennel (Foeniculum vulgare), French broom (Genista monspessulana), salt-water cord grass (Spartina alternifolia), Spanish broom (Spartium junceum), medusahead (Taeniatherum caput-medusae), gorse (Ulex europaeus), and periwinkle (Vinca major), among others.

Policy BIO-1.7 Remove Invasive Exotic Plants.

- Require the removal of invasive exotic species, to the extent feasible, when considering applicable measures in discretionary permit approvals for development projects unrelated to agriculture, and include monitoring to prevent re-establishment in managed areas.

Policy BIO-1.8 Restrict Use of Herbicides, Insecticides, and Similar Materials.

- Encourage the use of integrated pest management and organic practices to manage pests with the least possible hazard to the environment. Restrict the use of insecticides, herbicides, or any toxic chemical substance in sensitive habitats, except when an emergency has been declared; the habitat itself is threatened; a substantial risk to public health and safety exists, including maintenance for flood control; or such use is authorized pursuant to a permit issued by the agricultural commissioner. Encourage nontoxic strategies for pest control, such as habitat management using physical and biological controls, as an alternative to chemical treatment, and allow use of toxic chemical substances only after other approaches have been tried and determined unsuccessful. Continue to implement the Integrated Pest Management ordinance for county-related operations.

Policy BIO-1.9 Control Spread of Non-Native Invasive Animal Species.

- Work with landowners, the Marin County Open Space District, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the National Invasive Species Council, Point Reyes National Seashore, and other agencies and organizations to control and prevent the spread of non-native, invasive animal species. Species of particular concern include: introduced red fox (Vulpes vulpes), Chinese mitten crab (Eriocheir sinensis), bullfrog (Rana catesbeiana), and wild boar (Sus scrofa), among others. Wild turkey (Meleagris gallopavo) is also a non-native species of increasing abundance and concern in the county, and it requires careful management to prevent adverse impacts on native habitat.

Program BIO-1.a Map Natural Communities.

- Work with other agencies to complete GIS mapping of vegetation, wetlands, and streams in the county according to the National Vegetation Classification system, consistent with methodology used to map vegetation in the Golden Gate National Recreation Area and Point Reyes National Seashore.

Program BIO-1.b Develop Habitat Monitoring Programs.

- Using countywide GIS mapping of natural communities and other information sources, work with other agencies to develop a program to monitor trends in habitat loss, protection, and restoration. Establish cumulative thresholds for habitat loss for particularly vulnerable natural communities and use as a basis for modifying standards for mitigation.

Program BIO-1.c Maintain a Natural Resource Information Program.

- Provide interested public, the cities/towns in the county, and landowners with up-to-date information on sensitive ecological resources and regulations enacted to protect these resources, to accurately assess the potential impacts of proposed development on species and habitat diversity, determine when additional detailed site environmental assessment is necessary, provide information on invasive exotic species control, and monitor development trends and habitat management activities. The Natural Resource Program should contain the following:

    - Up-to-date information on verified sightings of special-status species and sensitive natural communities compiled by the California Natural Diversity Data Base, California Department of Fish and Game, Non-Game Heritage Division.
    - Reports and agency recovery programs for special-status species and sensitive natural communities, and related information summarizing regulations.
    - Up-to-date information from the U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, and California Department of Fish and Game, including lists of special-status species and their current status and lists of terrestrial natural communities and sensitive natural communities.
    - Available recovery plans for listed special-status species, mapping of critical habitat areas, and sightings and inventories of migratory species; reports, sightings, and recovery programs from credible, local sources such as the PRBO Conservation Science, California Native Plant Society, and Marin Audubon Society.
    - Biological reports completed as part of environmental review of proposed development projects and other studies, including information shared with cities and towns and districts within Marin County.
    - Lists of appropriate and inappropriate plant species for use in developing landscape plans to ensure that invasive exotic plants, plants with high water requirements, and, in fire hazard areas, species that are highly flammable, are excluded.
    - Summarized information for use by landowners addressing habitat protection and management of sensitive resources. This may include a list of references to existing and ongoing information sources pertaining to natural resource

management, and production of brochures summarizing setback standards, appropriate and inappropriate lands use practices, and desired management programs.

Program BIO-1.d Reevaluate County Native Tree Preservation and Protection Ordinance #3291.

- Consider expanding existing provisions along with establishing a complementary education and outreach program to ensure woodland conservation and management, not simply protection of individual trees. Factors to address in the reevaluation include preserving stands or groups of trees, identifying and promoting representative species and a diversity of age classes, minimizing fragmentation and providing linkages and corridors, protecting and enhancing other components of forest and woodlands such as understory species and associated wildlife, and providing for sustainable regeneration through natural processes.

Program BIO-1.f Prepare Appropriate Landscape Lists.

- Prepare lists of appropriate native and nonnative landscape species that are not invasive plants, have habitat value, have low-water requirements, and, for high hazard areas of the county, have low flammability. Prepare a second set of lists of plant species to avoid that are highly flammable, inappropriate water-thirsty plants, or undesirable invasive exotic species for property owner use in developing new or enhancing existing landscaping. Require applicants for discretionary approval with parcels that share all or part of a boundary with publicly owned open space to develop landscape plans that fully conform to the lists of appropriate plants. Prepare lists with input from the California Department of Fish and Game, agricultural commissioner, University of California Cooperative Extension, California Native Plant Society, Marin Municipal Water District, National Park Service, and other appropriate sources to verify suitability.

Program BIO-1.g Expand Education, Outreach, and Regulatory Programs Regarding Control of Invasive Exotic Species.

- Continue to work with the Marin/Sonoma Weed Management Area to promote the control and management of invasive exotic plant species. As part of the Natural Resource Information Program, provide interested public and landowners with information on invasive exotic species control and management, including up-to-date lists of invasive exotic plant and animal species of concern in Marin County, and links to other agencies and organizations involved in monitoring their status, such as the California Department of Fish and Game, U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration Fisheries, the National Invasive Species Council, and the California Invasive Plant Council. Explore the feasibility of creating an ordinance that prohibits the sale of selected invasive exotic plant species of particular threat to natural habitat in Marin County, such as Scotch broom and French broom.

GOAL BIO-2: Protection of Sensitive Biological Resources. Require identification of sensitive biological resources and commitment to adequate protection and mitigation, and monitor development trends and resource preservation efforts.

Policy BIO-2.1 Include Resource Preservation in Environmental Review.

- Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving "no net loss" of sensitive habitat acreage, values, and function.

Policy BIO-2.2 Limit Development Impacts.

- Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands and coastal habitat, and riparian habitats, as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources, or to adequately mitigate impacts by providing on-site or (as a lowest priority) off-site replacement at a higher ratio.

Policy BIO-2.3: Preserve Ecotones.

- Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

Policy BIO-2.4 Protect Wildlife Nursery Areas and Movement Corridors.

- Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts.

Policy BIO-2.5 Restrict Disturbance in Sensitive Habitat During Nesting Season.

- Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.

Policy BIO-2.6 Identify Opportunities for Safe Wildlife Movement.

- Ensure that existing stream channels and riparian corridors continue to provide for wildlife movement at roadway crossings, preferably through the use of bridges, or through over-sized culverts, while maintaining or restoring a natural channel bottom. Consider the need for wildlife movement in designing and expanding major roadways and other barriers in the county. Of particular concern is the possible widening of Highway 101 north of Novato to the county line, where maintenance of

movement opportunities for terrestrial wildlife between the undeveloped habitat on Mount Burdell and the marshlands along the Petaluma River is critical.

Policy BIO-2.7 Protect Sensitive Coastal Habitat.

- Protect coastal dunes, streams, and wetlands, and sensitive wildlife habitat from development in accordance with coastal resource management standards in the development code.

Policy BIO-2.8 Coordinate with Trustee Agencies.

- Consult with trustee agencies (the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers, Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission) during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected.

Policy BIO-2.9 Promote Early Consultation with Other Agencies.

- Require applicants to consult with all agencies with review authority for projects in areas supporting wetlands and specialstatus species at the outset of project planning.

Program BIO-2.a Require Site Assessments.

- Require site assessment by a qualified professional for development applications that may adversely affect sensitive biological or wetland resources, including jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, and important wildlife nursery areas and movement corridors. The assessment should determine the presence or absence of any sensitive resources that could be affected by development, evaluate the potential impacts, and identify measures for protecting the resource and surrounding habitat. Require the assessment to be conducted by a qualified professional paid for by the applicant. Unless waived, the qualified professional should be hired directly by Marin County.

Program BIO-2.b Conduct Habitat Connectivity Assessment.

- Conduct a comprehensive assessment of habitat fragmentation and connectivity loss in coordination with resource agencies, landowners, and interested public. Develop recommendations for policies to protect essential habitat corridors and linkages, and to restore and improve opportunities for native plant and animal dispersal. Protection could include acquisition as open space in fee title, permanent preservation and management under a conservation easement, or other suitable methods. Important factors that should be considered as part of the assessment include the following: locations of sensitive resources such as special-status species and wetlands; methods to eliminate obstructions along streams that currently limit the functions and values of riparian corridors; effects of intensive development, major roadways, and fencing on plant and animal dispersal; and the need to protect and enhance linkages between baylands and undeveloped uplands through the eastern part of the county.

Program BIO-2.c Facilitate Agency Review.

- Coordinate County review with that of agencies with jurisdiction over proposed activities and areas, and require evidence of compliance with any necessary permits from federal and State agencies prior to issuance of County grading or building permits.

Program BIO-2.d Promote Early Agency Consultation.

- Inform applicants upon initial contact with the County about other agencies that may have jurisdiction, and the policies and standards of those agencies that may regulate proposed development activities.

Program BIO-2.e Participate in FishNet4C Program.

- Continue to actively participate in the FishNet4C program and work cooperatively with participating agencies to implement recommendations to improve and restore aquatic habitat for listed anadromous fish species and other fishery resources.

GOAL BIO-3: Wetland Conservation. Require all feasible measures to avoid and minimize potential adverse impacts on existing wetlands and to encourage programs for restoration and enhancement of degraded wetlands.

Policy BIO-3.1 Protect Wetlands.

- Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer. Larger setback standards may apply to wetlands supporting special status species or associated with riparian systems and baylands under tidal influence, given the importance of protecting the larger ecosystems for these habitat types as called for under Stream Conservation and Baylands Conservation policies defined in Policy BIO-4.1 and BIO-5.1, respectively. Regardless of parcel size, a site assessment is required either where incursion into a WCA is proposed or where full compliance with all WCA criteria would not be met. Employ the following criteria when evaluating development projects that may impact wetland areas (see Figure 2-1):

  City-Centered Corridor:

  - For parcels more than 2 acres in size, a minimum 100-foot development setback from wetlands is required.
  - For parcels between 2 and 0.5 acres in size, a minimum 50-foot development setback from wetlands is required.
  - For parcels less than 0.5 acres in size, a minimum 20-foot development setback from wetlands is required. The developed portion(s) of parcels (less than 0.5 acres in size) located behind an existing authorized flood control levee or dike are not subject to a development setback.
  - Regardless of parcel size, an additional buffer may be required based on the results of a site assessment, if such an assessment is determined to be necessary. Site assessments will be required and conducted pursuant to Program BIO-3.c, *Require Site Assessment.*

  Coastal, Inland Rural, and Baylands Corridors:

  - For all parcels, provide a minimum 100-foot development setback from wetlands (areas within setbacks may contain significant resource values similar

to those within wetlands and also provide a transitional protection zone). An additional buffer may be required, based on the results of a site assessment, if such an assessment is determined to be necessary. Site assessments will be required and conducted pursuant to Program BIO-3.c, Require Site Assessment.

Exceptions to full compliance with the WCA setback standards may apply only in the following cases:

- Parcel is already developed with an existing use, provided no unauthorized fill or other modifications to wetlands have occurred as part of ongoing use of the property.
- Parcel is undeveloped and falls entirely within the WCA.
- Parcel is undeveloped and potential impacts on water quality, wildlife habitat, or other sensitive resources would be greater as a result of development outside the WCA than development within the WCA, as determined by a site assessment.
- Wetlands are avoided and a site assessment demonstrates that minimal incursion within the minimum WCA setback distance would not result in any significant adverse direct or indirect impacts on wetlands.

GOAL BIO-3.2 Require Thorough Mitigation. Where avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation. Mitigation wetlands should be of the same type as those lost and provide habitat for the species that use the existing wetland. Mitigation should also be required for incursion within the minimum WCA setback/transition zone.

Policy BIO-3.a Adopt Wetland Conservation Area Ordinance.

- Prepare and adopt an ordinance to refine wetland standards pursuant to WCA polices. Setback distances and buffer criteria for smaller developed parcels within the City-Centered Corridor should allow flexibility based on site constraints, opportunities for avoidance, presence of sensitive biological resources, and options for alternative mitigation. As part of the new ordinance, consider including incentives to reduce the extent of existing development within a WCA, or improve conditions that may be impacting sensitive resources if the parcel is proposed for redevelopment.

Policy BIO-3.b Comply with Regulations to Protect Wetlands.

- Continue to require development applications to include the submittal of a wetland delineation for sites with jurisdictional wetlands and to demonstrate compliance with these wetlands policies, standards, and criteria, and with State and federal regulations.

Policy BIO-3.c Require Site Assessment.

- Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the WCA are proposed, or adverse impacts to wetlands resources may otherwise occur. The assessment should be considered in determining whether any adverse direct or indirect 0impacts on wetlands would occur as a result of the proposed development, whether wetlands

criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by State and federal regulations. The site assessment shall be paid for by the applicant. Unless waived, the qualified professional shall be hired directly by Marin County.

Policy BIO-3.d Prioritize Wetland Avoidance.

- Amend the Development Code to require development to avoid wetlands and transition zones. Where avoidance of wetlands is not possible, require the provision of replacement habitat on-site through restoration and/or habitat creation, provided that no net loss of wetland area, wetland function, and habitat values occurs. On-site wetlands mitigation shall be provided at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio). Allow off-site wetland mitigation only when an applicant has demonstrated that no net loss of wetland area, wetland functions, and wetland values would occur, and that on-site mitigation is not possible. In those rare instances when on-site wetlands loss is unavoidable and on-site replacement is infeasible, require that a minimum of 3 acres be provided through mitigation for each acre lost (3:1 replacement ratio), preferably of the same habitat type as the wetland area that would be lost. The mitigation site should be close to the site of loss so that the mitigation wetland would provide habitat for the species that use the existing wetlands.

Policy BIO-3.e Establish Clear Mitigation Criteria.

- Amend the Development Code to incorporate wetland impact mitigations measures that accomplish the following objectives:

    a. No net losses shall occur in wetland acreage, functions, or values. This should include both direct impacts on wetlands and essential buffers, and consideration of potential indirect effects of development due to changes in available surface water and nonpoint water quality degradation. Detailed review of the adequacy of a proposed mitigation plan shall be performed as part of environmental review of the proposed development project to allow for a thorough evaluation of the anticipated loss, as well as the replacement acreage, functions, and values.

    b. Mitigation shall be implemented prior to and/or concurrently with the project activity causing the potential adverse impact to minimize any short-term loss and modification to wetlands.

    c. An area of adjacent upland habitat shall be protected to provide an adequate buffer for wetland functions and values. Development shall be set back the minimum distance specified in Policy BIO-3.1 to create this buffer, unless an exception is allowed and appropriate mitigation is provided where necessary, pursuant to Policy BIO-3.2.

    d. Mitigation sites shall be permanently protected and managed for open space and wildlife habitat purposes.

    e. Restoration of wetlands is preferred to creation of new replacement wetlands, due to the greater likelihood of success.

    f. Mitigation projects must to the extent feasible minimize the need for ongoing maintenance and operational manipulation (dredging, artificial water-level

controls, etc.) to ensure long-term success. Self-sustaining projects with minimal maintenance requirements are encouraged.

g. All plans to mitigate or minimize adverse impacts to wetland environments shall include provisions to monitor the success of the restoration project. The measures taken to avoid adverse impacts may be modified if the original plans prove unsuccessful. Performance bonds shall be required for all mitigation plans involving habitat creation or enhancement, including the cost of five years of post completion monitoring.

h. Mitigation must be commensurate with adverse impacts of the wetland alteration and consist of providing similar values and greater wetland acreage than those of the wetland area adversely affected. All restored or created wetlands shall be provided at the minimum replacement ratio specified in Program BIO-3.d and shall have the same or increased habitat values as the wetland proposed to be destroyed.

Policy BIO-3.f Establish Criteria for Setbacks.

- Establish criteria to be used in the review of individual development applications for determining an adequate setback distance in upland habitat to protect resource values in the setback area and to serve as a buffer zone between development and wetland areas. Setbacks may contain significant resource values similar to those within wetlands. Setbacks should provide for minimum filtration functions to intercept sediments and prevent degradation of adjacent wetlands to be protected. The setbacks shall conform with distances specified in Policy BIO-3.1, with varied minimum setbacks in the City-Centered Corridor, and minimum 100-foot setback distances in the Coastal, Inland Rural, and Baylands corridors. Within the City-Centered Corridor, flexibility should be included in the criteria based on site constraints, opportunities to ensure the avoidance of sensitive wetlands and associated resources such as special-status species, and the feasibility of alternative mitigation options for already developed properties and exceptions for existing uses.

Policy BIO-3.g Provide Landowner Education.

- Landowner education regarding the sensitivity of wetlands and adjacent upland buffer areas will be provided as part of the Natural Resource Information Program called for in Program BIO-1.c. An emphasis will be placed on educating owners of developed properties adjacent to wetlands where minimum upland setback distances are not provided. Information on regulations protecting wetlands and adjacent areas that may contain significant resource values should be available, together with general methods to minimize disturbance and improve habitat values. An updated list of regulatory agencies and their contact information should be maintained as part of the Natural Resource Information Program.

Policy BIO-3.h Evaluate Wetlands Definitions.

- Conduct a study to evaluate whether to continue to rely on the Army Corps of Engineers definition of wetlands outside of the Coastal Zone or to expand the use of the Coastal Zone (or "Cowardin") definition to the entire county. The study should consider all of the following in developing a recommendation to the Board of Supervisors:

(1) the effect of the expanded wetland definition when coupled with SCA and WCA requirements;

(2) the extent of the geographic areas potentially affected by the expanded definition;

(3) performance of wetland delineations for areas outside the Coastal Zone (in-house staff or consultants);

(4) potential costs and workloads associated with delineations, administration, and appeals;

(5) overall feasibility of implementation and enforcement responsibilities associated with an expanded definition;

(6) benefits and challenges of a consistent definition throughout the county;

(7) what percentage of wetlands would continue to be regulated by the Army Corps of Engineers; and

(8) what percentage of cost could be paid for by the applicant.

GOAL BIO-4. Riparian Conservation. Protect and, where possible, restore the natural structure and function of riparian systems.

Policy BIO-4.1 Restrict Land Use in Stream Conservation Areas.

- A Stream Conservation Area (SCA) is established to protect the active channel, water quality and flood control functions, and associated fish and wildlife habitat values along streams. Development shall be set back to protect the stream and provide an upland buffer, which is important to protect significant resources that may be present and provides a transitional protection zone. Best management practices1 shall be adhered to in all designated SCAs. Best management practices are also strongly encouraged in ephemeral streams not defined as SCAs. Exceptions to full compliance with all SCA criteria and standards may be allowed only if the following is true:

  1. A parcel falls entirely within the SCA; or

  2. Development on the parcel entirely outside the SCA either is infeasible or would have greater impacts on water quality, wildlife habitat, other sensitive biological resources, or other environmental constraints than development within the SCA.

  SCAs are designated along perennial, intermittent, and ephemeral streams as defined in the Countywide Plan Glossary. Regardless of parcel size, a site assessment is required where incursion into an SCA is proposed or where full compliance with all SCA criteria would not be met. An ephemeral stream is subject to the SCA policies if it: (a) supports riparian vegetation for a length of 100 feet or more, and/or (b) supports special-status species and/or a sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream. For those ephemeral streams that do not meet these criteria, a minimum 20-foot development setback should be required.

  SCAs consist of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks to the widths defined below (see Figure 2-2). The SCA encompasses any jurisdictional wetland or unvegetated other waters within the stream channel, together with the adjacent

uplands, and supersedes setback standards defined for WCAs. Human-made flood control channels under tidal influence are subject to the Bayland Conservation policies. The following criteria shall be used to evaluate proposed development projects that may impact riparian areas:

City-Centered Corridor:

- For parcels more than 2 acres in size, provide a minimum 100-foot development setback on each side of the top of bank.
- For parcels between 2 and 0.5 acres in size, provide a minimum 50-foot development setback on each side of the top of bank.
- For parcels less than 0.5 acres in size, provide a minimum 20-foot development setback. The developed portion(s) of parcels (less than 0.5 acres in size) located behind an existing authorized flood control levee or dike are not subject to a development setback.
- Regardless of parcel size, an additional buffer may be required based on the results of a site assessment. A site assessment may be required to confirm the avoidance of woody riparian vegetation and to consider site constraints, presence of other sensitive biological resources, options for alternative mitigation, and determination of the precise setback. Site assessments will be required and conducted pursuant to Program BIO-4.g, Require Site Assessment.

Coastal, Inland Rural, and Baylands Corridors:

- For all parcels, provide a development setback on each side of the top of bank that is the greater of either (a) 50 feet landward from the outer edge of woody riparian vegetation associated with the stream or (b) 100 feet landward from the top of bank. An additional setback distance may be required based on the results of a site assessment. A site assessment may be required to confirm the avoidance of woody riparian vegetation and to consider site constraints, presence of other sensitive biological resources, options for alternative mitigation, and determination of the precise setback. Site assessments will be required and conducted pursuant to Program BIO-4.g, Require Site Assessment. SCAs shall be measured as shown in Figure 2-2.

Allowable uses in SCAs in any corridor consist of the following, provided they conform to zoning and all relevant criteria and standards for SCAs:

- Existing permitted or legal nonconforming structures or improvements, their repair, and their retrofit within the existing footprint;
- Projects to improve fish and wildlife habitat;
- Driveway, road and utility crossings, if no other location is feasible;
- Water-monitoring installations;
- Passive recreation that does not significantly disturb native species;
- Necessary water supply and flood control projects that minimize impacts to stream function and to fish and wildlife habitat;
- Agricultural uses that do not result in any of the following:
    a. The removal of woody riparian vegetation;

b. The installation of fencing within the SCA that prevents wildlife access to the riparian habitat within the SCA;

c. Animal confinement within the SCA; and

d. A substantial increase in sedimentation.

Policy BIO-4.2 Comply with SCA Regulations.

- Implement established setback criteria for protection of SCAs through established discretionary permit review processes and/or through adoption of new ordinances. Environmental review shall be required where incursion into an SCA is proposed and a discretionary permit is required. In determining whether allowable uses are compatible with SCA regulations, development applications shall not be permitted if the project does any of the following:

  - Adversely alters hydraulic capacity;
  - Causes a net loss in habitat acreage, value, or function;
  - Degrades water quality.

Policy BIO-4.3 Manage SCAs Effectively.

- Review proposed land divisions in SCAs to allow management of a stream by one property owner to the extent possible.

Policy BIO-4.4 Promote Natural Stream Channel Function.

- Retain and, where possible, restore the hydraulic capacity and natural functions of stream channels in SCAs. Discourage alteration of the bed or banks of the stream, including filling, grading, excavating, and installation of storm drains and culverts. When feasible, replace impervious surfaces with pervious surfaces. Protect and enhance fish habitat, including through retention of large woody debris, except in cases where removal is essential to protect against property damage or prevent safety hazards. In no case shall alterations that create barriers to fish migration be allowed on streams mapped as historically supporting salmonids. Alteration of natural channels within SCAs for flood control should be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for reestablishment of woody trees and shrubs without compromising the flood flow capacity where avoidance of existing riparian vegetation is not possible.

Policy BIO-4.5 Restore and Stabilize Stream Channels.

- Pursue stream restoration and appropriate channel redesign where sufficient right-of-way exists that includes the following: a hydraulic design, a channel plan form, composite channel cross-section that incorporates low flow and bankfull channels removal and control of invasive exotic plant species, and biotechnical bank stabilization methods to promote quick establishment of riparian trees and other native vegetation.

Policy BIO-4.6 Control Exotic Vegetation.

- Remove and replace invasive exotic plants with native plants as part of stream restoration projects and as a condition of site-specific development approval in an SCA, and include monitoring to prevent reestablishment.

Policy BIO-4.7 Protect Riparian Vegetation.

- Retain riparian vegetation for stabilization of streambanks and floodplains, moderating water temperatures, trapping and filtering sediments and other water pollutants, providing wildlife habitat, and aesthetic reasons.

Policy BIO-4.8 Reclaim Damaged Portions of SCAs.

- Restore damaged portions of SCAs to their natural state wherever possible, and reestablish as quickly as possible any herbaceous and woody vegetation that must be removed within an SCA, replicating the structure and species composition of indigenous native riparian vegetation.

Policy BIO-4.9 Restore Culverted Streams.

- Replace storm drains and culverts in SCAs with natural drainage and flood control channels wherever feasible. Reopening and restoring culverted reaches of natural drainages should be considered part of review of development applications on parcels containing historic natural drainages where sufficient land area is available to accommodate both the reopened drainage and project objectives. Detailed hydrologic analysis may be required to address possible erosion and flooding implications of reopening the culverted reach, and to make appropriate design recommendations. Incentives should be provided to landowners in restoring culverted, channelized, or degraded stream segments. Where culverts interfere with fish migration but replacement is not possible, modify culverts to allow unobstructed fish passage.

Policy BIO-4.10 Promote Interagency Cooperation.

- Work in close cooperation with flood control districts, water districts, and wildlife agencies in the design and choice of materials for construction and alterations within SCAs.

Policy BIO-4.11 Promote Riparian Protection.

- Support agencies, organizations, and programs in Marin County that protect, enhance, and restore riparian areas.

Policy BIO-4.12 Support and Provide Riparian Education Efforts.

- Educate the public and County staff about the values, functions, and importance of riparian areas. Landowner education regarding the sensitivity of riparian corridors will be provided as part of the Natural Resource Information Program called for in Program BIO-1.c. An emphasis will be placed on public outreach to owners of developed properties encompassing or adjacent to SCAs where minimum setback distances are not provided. Information on regulations protecting riparian corridors should be available, together with general methods to minimize disturbance and improve habitat values. An updated list of regulatory agencies and their contact information should be maintained as part of the Natural Resource Information Program.

Policy BIO-4.13 Provide Appropriate Access in SCAs.

- Ensure that public access to publicly owned land within SCAs respects the environment, and prohibit access if it will degrade or destroy riparian habitat. Acquire public lands adjacent to streams where possible to make resources more

accessible and usable for passive recreation, and to protect and enhance streamside habitat.

Policy BIO-4.14 Reduce Road Impacts in SCAs.

- Locate new roads and roadfill slopes outside SCAs, except at stream crossings, and consolidate new road crossings wherever possible to minimize disturbance in the SCA. Require spoil from road construction to be deposited outside the SCA, and take special care to stabilize soil surfaces.

Policy BIO-4.15 Reduce Wet Weather Impacts.

- Ensure that development work adjacent to and potentially affecting SCAs is not done during the wet weather or when water is flowing through streams, except for emergency repairs, and that disturbed soils are stabilized and replanted, and areas where woody vegetation has been removed are replanted with suitable species before the beginning of the rainy season.

Policy BIO-4.16 Regulate Channel and Flow Alteration.

- Allow alteration of stream channels or reduction in flow volumes only after completion of environmental review, commitment to appropriate mitigation measures, and issuance of appropriate permits by jurisdictional agencies based on determination of adequate flows necessary to protect fish habitats, water quality, riparian vegetation, natural dynamics of stream functions, groundwater recharge areas, and downstream users.

Policy BIO-4.17 Continue Collaboration with the Marin Resource Conservation District.

- Continue to collaborate with, support, and participate in programs provided by the Marin Resource Conservation District and the Natural Resource Conservation Service to encourage agricultural operators who conduct farm or ranch activities within a Streamside Conservation Area to minimize sedimentation and erosion to enhance habitat values.

Policy BIO-4.18 Promote the Use of Permeable Surfaces When Hardscapes Are Unavoidable in the SCA and WCA.

- Permeable surfaces rather than impermeable surfaces shall be required wherever feasible in the SCA and WCA.

Policy BIO-4.19 Maintain Channel Stability.

- Applicants for development projects may be required to prepare a hydraulic and/or geomorphic assessment of on-site and downstream drainageways that are affected by project area runoff. This assessment should be required where evidence that significant current or impending channel instability is present, such as documented channel bed incision, lateral erosion of banks (e.g., sloughing or landsliding), tree collapse due to streambank undermining and/or soil loss, or severe in-channel sedimentation, as determined by the County. Characteristics pertinent to channel stability would include hillslope erosion, bank erosion, excessive bed scour or sediment deposition, bed slope adjustments, lateral channel migration or bifurcation, channel capacity, and the condition of riparian vegetation. The hydraulic and/or geomorphic assessment shall include on-site channel or drainageway segments over which the applicant has control or access. In the event that project development would result in or further exacerbate existing channel instabilities, the applicant could

either propose his/her own channel stabilization program subject to County approval or defer to the mitigations generated during the required environmental review for the project, which could include maintenance of peak flows at pre- and post-project levels, or less. Proposed stabilization measures shall anticipate project-related changes to the drainageway flow regime. All project improvements should be designed to minimize flood hydrograph peak flow or flood volume increases into drainage courses. To this end, design features such as porous pavement, pavers, maximizing overall permeability, drainage infiltration, disconnected impervious surfaces, swales, biodetention, green roofs, etc., should be integrated into projects as appropriate. For projects subject to discretionary review, the applicant may be required, as appropriate, to submit a pre-and post-project hydrology and hydraulic report detailing the amount of new impervious surface area and accompanying surface runoff from all improvement areas, including driveways — with a goal of zero increase in runoff (no net increase in peak off-site runoff). The applicant may be required to participate in a peak stormwater runoff management program developed pursuant to new Program BIO-4.20.

Policy BIO-4.20 Minimize Runoff.

- In order to decrease stormwater runoff, the feasibility of developing a peak stormwater management program shall be evaluated to provide mitigation opportunities such as removal of impervious surface or increased stormwater detention in the watershed.

Policy BIO-4.a Adopt Expanded SCA Ordinance.

- Adopt a new SCA ordinance that would implement the SCA standards for parcels traversed by or adjacent to a mapped anadromous fish stream and tributary. Such an ordinance could, by way of example, require compliance with the incorporation of best management practices into the proposed project and could consider modest additions to existing buildings that would not result in significant impact to riparian resources, such as additions that do not exceed 500 square feet of total floor area and that do not increase the existing horizontal encroachment into the SCA, provided a site assessment first confirms the absence of adverse impacts to riparian habitats. As part of the new ordinance, consider including additional incentives, such as reduced fees or other similar incentives, to reduce the extent of existing development within an SCA or improve conditions that may be impacting sensitive resources.

Policy BIO-4.b Reevaluate SCA Boundaries.

- Beginning with the City-Centered Corridor and smaller parcels, conduct a comprehensive study to reevaluate standards used to protect SCAs and regulate development adjacent to streams. The study shall consider available data on stream protection and management standards, their effectiveness, and the effectiveness of the current standards used in Marin County, including the 50- and 100-foot setback distances (plus additional setbacks from the edge of riparian vegetation where applicable). The study shall consider stream functions on a watershed-level basis, and include input from professionals such as a fluvial geomorphologist, hydrologist, wildlife biologist, and vegetation ecologist, together with resource agencies and interested members of the public. Each SCA should encompass all woody riparian vegetation and be of sufficient width to filter sediments and other pollutants before they enter the stream channel. Careful study may be needed to distinguish woody riparian vegetation from other types of woodland or forest vegetation in some areas.

Policy BIO-4.c Prepare County Stream Map.

- Use the County GIS to map perennial, intermittent, and, where feasible, ephemeral streams subject to SCA policies. Use the resulting mapping in conjunction with USGS maps and the "ephemeral stream" definition to confirm SCAs on parcels proposed for development. Add to and update the map on an ongoing basis as additional streams are surveyed.

Policy BIO-4.d Establish Functional Criteria for Land Uses in SCAs.

- Develop detailed criteria for protection of riparian functions, and identify methods for their use in evaluating proposed development.

Policy BIO-4.e Identify Proposals Within SCAs.

- Determine whether a proposed development falls wholly or partially within an SCA, through agency review by County staff, and as necessary by a qualified professional, of discretionary application materials and site inspection.

Policy BIO-4.f Identify Potential Impacts to Riparian Systems.

- At the time of a development application, evaluate potential impacts on riparian vegetation and aquatic habitat, and incorporate measures to protect riparian systems into the project design and construction. Retain and minimize disturbance to woody and herbaceous riparian vegetation in SCAs and adjacent areas. (Tree growth may be cleared from the stream channel where removal is essential to protect against property damage or prevent safety hazards.)

Policy BIO-4.g Require Site Assessment.

- Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the SCA are proposed, or adverse impacts to riparian resources may otherwise occur. Unless waived, the qualified professional shall be hired by Marin County. The site assessment shall be paid for by the applicant and considered in determining whether any adverse direct or indirect impacts on riparian resources would occur as a result of the proposed development, whether SCA criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by State and federal regulations.

Policy BIO-4.h Comply with SCA Criteria and Standards.

- All development permit applications shall be reviewed for conformity with these SCA policies, criteria, and standards and in accordance with the California Environmental Quality Act. Proposals that do not conform to SCA policies, and cannot be modified or mitigated to conform, shall be denied. If a proposal involves the creation of a new parcel that is wholly or partially in an SCA, the land division shall be designed to ensure that no development occurs within the SCA.

Policy BIO-4.i Replace Vegetation in SCAs.

- When removal of native riparian vegetation is unavoidable in an SCA, and mitigation is required, require establishment of native trees, shrubs, and ground covers within a period of five years at a rate sufficient to replicate, after a period of five years, the appropriate density and structure of vegetation removed. Require replacement and

enhancement planting to be monitored and maintained until successful establishment provides for a minimum replacement or enhancement ratio of 2:1.

Policy BIO-4.j Continue Funding Fencing of Sensitive Stream Areas.

- Encourage continued funding in conjunction with the Marin Resource Conservation District, the Natural Resource and Conservation Service, and other relevant agencies, to pay the cost of fencing sensitive streamside areas (on both public lands and private property) that could be impacted by cattle grazing.

Policy BIO-4.k Locate Trails Appropriately.

- Situate trails at adequate distances from streams to protect riparian and aquatic habitat and wildlife corridors. Trails may occasionally diverge close to the top of bank to provide visual access and opportunities for interpretive displays on the environmental sensitivity of creek habitats. (See policies and programs in the Trails Section of this Element.)

Policy BIO-4.l Monitor Stream Conservation Areas.

- Establish a system of monitoring SCAs, which may include mapping fenced streams and stream restoration areas to ensure the protection of vegetation, soils, water quality, and wildlife habitat along streams.

Policy BIO-4.m Encourage Conservation Plans Within the Stream Conservation Area.

- Continue to collaborate with the Marin Resource Conservation District to encourage and support the continued implementation of the Marin Coastal Watersheds Permit Coordination Program, especially the preparation of management and conservation plans where appropriate for agricultural activities within the Stream Conservation Areas.

Policy BIO-4.n Provide Information to Reduce Soil Erosion and Sedimentation.

- Provide information and fact sheets on programs offered by the Marin Resource Conservation District at the Community Development Agency front counter to landowners and applicants who submit development proposals within the Streamside Conservation Area in the Stemple, Walker, and Lagunitas creek watersheds.

Policy BIO-4.o Consider Culvert Restoration.

- As part of the expanded SCA ordinance, consider additional policy language to encourage reopening culverted reaches and restoring channelized reaches of natural drainages. This may include adjustments in minimum standard setback distances where site constraints prevent complete compliance along the restored or enhanced channel reach. A detailed analysis may be required to demonstrate restoration feasibility and address possible effects on erosion and flooding potential. Incentives may be available to landowners to encourage restoration and enhancement efforts.

Policy BIO-4.p Implement NPDES Phase II.

- Continue to implement NPDES Phase II permit requirements relating to peak flow controls to ensure that project related and cumulative impacts to peak flows are minimized or avoided through conditions on project approval as required by the ordinances.

Policy BIO-4.q Develop Standards Promoting Use of Permeable Materials.

- Review existing permit requirements for development in SCAs and WCAs, and recommend additional standards for project review and corrective measures as needed to protect SCAs and WCAs from inappropriate ministerial and discretionary development. Develop additional standards for requiring the use of best management practices, including measures such as the use of permeable materials in the SCA and WCA. A checklist of Best Management Practices should be made available to applicants.

Policy BIO-4.r Review Septic System Setbacks in SCA and WCA.

- Review existing septic requirements within SCAs and WCAs, and revise requirements as necessary to provide monitoring and to protect SCAs and WCAs from impacts associated with septic systems. Consider adopting larger setback standards applied to new development for septic systems and their associated leachfields.

Policy BIO-4.s Continue Collaboration with the Marin Resource Conservation District and Agricultural Commissioner.

- Continue to collaborate with, support, and participate in programs provided by the Marin Resource Conservation District, the Natural Resource Conservation Service, and the Agricultural Commissioner's Office to encourage agricultural operators who conduct farm or ranch activities within a Streamside Conservation Area to minimize pesticide use and activities that cause sedimentation and erosion, to enhance habitat values.

Policy BIO-4.t Collaborate with Groups to Address Implementation of Protections to SCAs and WCAs.

- Collaborate with local, regional, State, and federal organizations (Marin Organic, MALT, SPAWN, Marin Audubon, RCD, Fish and Game, RWQCB, Sierra Club, Farm Bureau, Trout Unlimited, and affected property owners) to address long term habitat protection and develop funding mechanisms to address the issue.

Policy BIO-4.u Investigate Tax Delinquent Properties.

- Investigate conversion of tax delinquent properties in SCAs into public ownership.

GOAL BIO-5: Baylands Conservation. Preserve and enhance the diversity of the baylands ecosystem, including tidal marshes and adjacent uplands, seasonal marshes and wetlands, rocky shorelines, lagoons, agricultural lands, and low-lying grasslands overlying historical marshlands. In particular, historic marshland in the Richardson Bay and Bothin Marsh area should be included in the resource mapping and analysis to determine if these parcels meet the criteria for inclusion in the Baylands Corridor. This mapping and analysis should do the following:

- Identify existing vegetative cover and sensitive features, such as streams, wetlands, and occurrences of special-status species;

- Use focal species and other similar ecological tools to determine the interrelationship between baylands and uplands;

- Identify methods to maintain connectivity between sensitive habitat features and baylands;

- Specify criteria and thresholds used in determining the extent of upland habitat essential to the baylands ecosystem;

- Make recommendations on an appropriate biologically based boundary if the Baylands Corridor is to be expanded; and

- Identify lands that provide habitat, could be restored to provide habitat, or provide protection from sea level rise. Completion of the analysis does not require on-site evaluations. All parcels added to the Baylands Corridor as a result of this study are subject to Baylands Corridor regulations in effect at that time.

Policy BIO-5.1 Protect the Baylands Corridor.

- Ensure that baylands and large, adjacent essential uplands are protected, and encourage enhancement efforts for baylands, including those in the Baylands Corridor. The following criteria shall be used to evaluate proposed development projects that may impact the Baylands Corridor:

  - For large parcels (over 2 acres in size), adhere to development setback standards for areas qualifying for protection under the WCA and SCA, but increase setback distances as necessary to ensure that hydrologically isolated features such as seasonal wetlands and freshwater marshes are adequately linked to permanently protected habitat. These additional development setbacks shall serve to prevent fragmentation and preserve essential upland buffers in the Baylands Corridor.

  - For small parcels (2 acres or less in size), encourage property owners where suitable habitat exists to preserve up to 10 feet landward of mean high tide as a species refuge area for high water events. Site constraints, opportunities for avoidance of sensitive biological resources, and options for alternative mitigation, may also be considered.

  - Minor redevelopment involving less than 25% of a structure on a residential or industrial parcel that is already filled and at least 50% developed may be exempted from the requirements for a site assessment, provided that no additional filling or modification to wetlands occurs. (See BIO-5.2.)

Policy BIO-5.2 Limit Development and Access.

- Ensure that development does not encroach into sensitive vegetation and wildlife habitats, damage fisheries or aquatic habitats, limit normal wildlife range, or create barriers that cut off access to food, water, or shelter for wildlife. Require an environmental assessment where development is proposed within the Baylands Corridor.

Policy BIO-5.3 Leave Tidelands in Their Natural State.

- Require that all tidelands be left in their natural state to respect their biological importance to the estuarine ecosystem. Any modifications should be limited to habitat restoration or enhancement plans approved by regulatory agencies.

Policy BIO-5.4 Restore Marshlands.

- Enhance wildlife and aquatic habitat value of diked bay marshlands, and encourage land uses that provide or protect wetland or wildlife habitat and do not require diking, filling, or dredging.

Policy BIO-5.5 Protect Freshwater Habitats.

- Preserve and, where possible, expand habitats associated with freshwater streams, seasonal wetlands, and small former marshes to facilitate the circulation, distribution, and flow of fresh water, and to enhance associated habitat values.

Policy BIO-5.6 Use Flood Basins for Seasonal Habitat.

- Utilize natural or manage manmade flood basins to provide seasonal habitat for waterfowl and shorebirds, and prohibit development in these basins to protect habitat values.

Policy BIO-5.7 Limit Access to Wetlands.

- Design public access to avoid or minimize disturbance to wetlands, necessary buffer areas, and associated important wildlife habitat while facilitating public use, enjoyment, and appreciation of bayfront lands.

Policy BIO-5.8 Control Shoreline Modification.

- Ensure that any modifications to the shoreline do not result in a loss of biodiversity or opportunities for wildlife movement. Possible modifications may include construction of revetments, sea walls, and groins, as permitted by State and federal agencies.

Policy BIO-5.9 Allow Limited Agricultural Use.

- Encourage only those agricultural uses that are compatible with protection of wetlands and other sensitive resources to remain in baylands. Conversion of non-agricultural lands to agriculture should occur only if wetlands or other sensitive biological resources would not be lost or adversely affected. Where possible, wetlands should be enhanced and restored as part of agricultural use or conversion.

Policy BIO-5.10 Encourage Acquisition of Essential Baylands.

- Continue to acquire large, essential baylands for open space and habitat restoration purposes, and support public and private partnerships working to acquire baylands.

Program BIO-5.a Establish Criteria for Upland Setbacks in the Baylands Corridor.

- During the Development Code update, establish criteria to be used in the review of individual development applications for determining an adequate setback distance in adjacent uplands to serve as a buffer zone between development and remaining or historic tidelands and wetlands. Setbacks should provide for at least the minimum distances necessary to avoid adverse effects of increased human activity and potential disturbance to sensitive biological resources, and to provide essential linkages between important features such as seasonal wetlands, freshwater marsh, and roosting and nesting areas. This should include consideration of possible implications of future sea level rise on existing habitat. Use focus species, locational distribution of sensitive resources, and other ecological tools to establish criteria for determining essential habitat connectivity in site-specific planning that serves to preserve and enhance existing wildlife habitat values.

Program BIO-5.b Provide Landowner Education.

- Landowner education will be provided regarding the sensitivity of baylands and adjacent upland buffer areas as part of the Natural Resource Information Program

called for in Program BIO-1.c. An emphasis will be placed on educating owners of developed properties adjacent to baylands where minimum upland setback distances are not provided. Information on regulations protecting baylands should be available, together with general methods to minimize disturbance and improve habitat values. An updated list of regulatory agencies and their contact information should be maintained as part of the Natural Resource Information Program.

Program BIO-5.c Update Development Code.

- Update the Development Code, redefining the Bayfront Conservation Zone to reflect Baylands Corridor policies as well as including relevant aspects from the current Bayfront Conservation Zone. The updated Development Code shall identify criteria to be used in evaluating proposed development projects, and appropriate development restrictions necessary to protect sensitive biological and wetland resources.

Program BIO-5.d Enforce Tidelands Restrictions.

- Ensure that the Development Code prohibits diking, filling, or dredging in tidelands, unless the area is already developed and currently being dredged. Current dredging operations for maintenance purposes may continue, subject to environmental review, if necessary. In some cases, exceptions may be made for areas that are isolated or limited in productivity. In tidal areas, only land uses that are water dependent shall be permitted, as consistent with federal, State, and regional policy. These include, but are not limited to the following:

    - Ports
    - Water-dependent industry and utilities
    - Essential water conveyance
    - Wildlife refuge and habitat restoration
    - Water-oriented recreation

Exemptions may be granted for emergency or precautionary measures taken in the public interest, such as protection from flooding or other natural hazards. Removal of native vegetation shall be discouraged, and secondary effects evaluated, such as potential reduction in available surface water and water quality degradation due to nonpoint discharge. Alteration of hydrology should only be allowed when it can be demonstrated that the impact will be beneficial or insignificant.

Program BIO-5.e Enforce Diked Bay Marshlands Requirements.

- Ensure that the updated Development Code allows only those land uses in diked bay marshlands that protect wetland or wildlife habitat and do not require diking, filling, or dredging, including the following:

    - Restoration to tidal status
    - Restoration to seasonal wetlands
    - Appropriate agricultural use
    - Flood basins
    - Wastewater reclamation areas
    - Maintenance and minor expansion of existing development located landward of existing dikes

Other uses that do not require diking, filling, or dredging may be allowed, consistent with zoning, if it can be demonstrated that impacts to baylands are minimized and adequately mitigated. Land uses that provide protection from flood or other natural hazards may be allowed if necessary to protect public health and safety. Existing dredging operations in developed areas may continue, subject to environmental review, if necessary. Priority shall be given to water-oriented uses, such as public access and low-intensity passive recreational and educational opportunities that include habitat protection and enhancement components.

Program BIO-5.f Control Public Access.

- Design public use areas to be clearly marked, to minimize possible conflicts between public and private uses, to provide continuous walkways from the nearest roads to the shoreline and along the shoreline, to be set back from any proposed structure, and to be buffered from wetlands. Restrict access to environmentally sensitive marshland and adjacent habitat, especially during spawning and nesting seasons.

Program BIO-5.g Identify Baylands as a Priority for Open Space Acquisition.

- Designate regionally significant baylands, including tidelands, diked marshlands, and adjacent uplands, as a priority for open space acquisition, particularly in areas known to support essential habitat for special-status species, wetlands, and important habitat linkages for wildlife (see policies and programs in the Open Space and Trails sections of this Element).

Program BIO-5.h Encourage Baylands Protection in Cities and Towns.

- Work with the cities and towns of Corte Madera, Larkspur, Mill Valley, Novato, San Rafael, Sausalito, Belvedere, and Tiburon to protect tidelands and remaining undeveloped, diked historic saltmarsh areas.

Program BIO-5.i Conduct Mapping and Analysis.

- Small parcels not currently subject to tidal influence should be subject to mapping and analysis to determine whether they should be added to or omitted from the Baylands Corridor. In particular, historic marshland in the Richardson Bay and Bothin Marsh area should be included in the resource mapping and analysis to determine if these parcels meet the criteria for inclusion in the Baylands Corridor. This mapping analysis should do the following:

    - Identify existing vegetative cover and sensitive features, such as streams, wetlands, and occurrences of special-status species.
    - Use focal species and other similar ecological tools to determine the interrelationship between baylands and uplands.
    - Identify methods to maintain connectivity between sensitive habitat features and baylands;
    - Specify criteria and thresholds used in determining the extent of upland habitat essential to the baylands ecosystem;
    - Make recommendations on an appropriate biologically based boundary if the Baylands Corridor is to be expanded; and
    - Identify lands that provide habitat, could be restored to provide habitat, or provide protection from sea level rise. Completion of the analysis does not

require on-site evaluations. All parcels added to the Baylands Corridor as a result of this study are subject to Baylands Corridor regulations in effect at that time.

Program BIO-5.j Consider Technical Group.

- Consider establishing a technical working group on an as needed basis to provide scientific expertise in evaluating natural resource issues regarding adequate protections when considering revisions for SCA and WCA regulations, and baylands mapping.

Marin County Code

Marin County Code Chapter 22.27 protects and preserves native trees in the non-agricultural unincorporated areas of Marin County through permit requirements and limited tree removal. Protected trees are named below, in the Native Tree Preservation and Protection Ordinance. Mitigation may include establishment and maintenance of replacement trees onsite; for large properties, a management plan which designates areas of the property for preservation; removal of invasive exotic species; the posting of a bond to cover inspection costs associated with the described measures; a payment of $100 per tree to be deposited into the Tree Replacement Fund managed by the Marin County Open Space District for planting and maintenance of trees and other vegetation.

Marin County Native Tree Preservation and Protection Ordinance

Marin County has adopted a native tree protection and preservation ordinance (Ordinance 3342, adopted May 16, 2002) that defines "protected trees" and regulates their removal. Trees meeting the following criteria are "protected trees" and their removal is prohibited without a permit:

1. Trees on an Unimproved Parcel. The following native trees are protected individually: big-leaf maple (*Acer macrophyllum*), box elder (*A. negundo* var. *californicum*), California buckeye (*Aesculus californica*), white alder (*Alnus rhombifolia*), red alder (*A. rubra*), service-berry (*Amelanchier alnifolia*), giant chinquapin (*Castanopsis chrysophylla*), mountain mahogany (*Cercocarpus betuloides*), hawthorn (*Crataegus douglasii*), Oregon ash (*Fraxinus latifolia*), silk tassel (*Garrya elliptica*), tanbark oak (*Lithocarpus densorus*), wax myrtle (*Myrica californica*), bishop pine (*Pinus muricata*), douglas fir (*Pseudotsuga menziesi*), red elderberry (*Sambucus callicarpa*), coast redwood (*Sequoia sempervirens*), Pacific yew (*Taxus brevifolia*), California nutmeg (*Torreya california*), and California bay (*Umbellularia californica*) with a DBH greater than 10 inches; and Pacific madrone (*Arbutus menziesii*), sargent cypress (*Cupressus sargentii*), coast live oak (*Quercus agrifolia*), canyon live oak (*Q. chrysolepis*), blue oak (*Q. douglasii*), Oregon oak (*Q. garryana*), California black oak (*Q. kelloggsii*), valley oak (*Q. lobata*), chaparral oak (*Q. wislizeni*), narrow-leaved willow (*Salix exigua*), red willow (*S. laevigata*), arroyo willow (*S. lasiolepis*), shining willow (*S. lucida* ssp. *Lasiandra*), Scoulier's willow (*S. scouleriana*), and silica willow (*S. sitchensis*) with a DBH greater than 6 inches.

2. Trees on an Improved Parcel. More than a total of five (5) trees of any native species each of which having a DBH as specified in Attachment 1 (to the Ordinance) where the removal of such trees occurs within any 12 month period on an improved parcel.

3. Trees Required as Condition of Approval. Any tree required to be planted or preserved as a condition of approval of a County discretionary permit application where such tree does not meet one or more of the exemption criteria described in Section 22.75.050 (Exemptions).

Exemptions to the ordinance may be made for trees that are not specifically defined as a protected tree or for other reasons outlined in the ordinance.

SVCSD

City of Sonoma General Plan

GOAL ER-2: Identify, preserve, and enhance important habitat areas and significant environmental resources.

Policy 2.1: Monitor the health of local environmental resources.

Implementation Measure 2.1.1: Work with the Sonoma Ecology Center and other appropriate parties to establish and maintain an inventory of significant local environmental resources and features.

Policy 2.2: Preserve habitat that supports threatened, rare, or endangered species identified by State or federal agencies.

Implementation Measure 2.2.1: Evaluate development applications in terms of potential impacts on significant biological resources.

Policy 2.3: Protect and, where necessary, enhance riparian corridors.

Implementation Measure 2.3.1: Work with the County Water Agency, State Department of Fish and Game, the Sonoma Ecology Center and other interested parties to implement guidelines and regulations for preserving and enhancing riparian corridors and wildlife habitat.

Policy 2.6: Preserve existing trees and plant new trees.

Implementation Measure 2.6.1: Develop amendments to the Tree Ordinance to further protect significant trees on private property.

Implementation Measure 2.6.2: Carry out the programs of the City Tree Planting Plan, including preserving existing trees through the Tree Ordinance and increasing canopy cover, streetscape trees, parking lot shading, and tree maintenance.

Policy 2.9: Require development to avoid potential impacts to wildlife habitat, air quality, and other significant biological resources, or to adequately mitigate such impacts if avoidance is not feasible.

Implementation Measures 2.2.1 and 2.3.1, above.

City of Sonoma Municipal Code

City of Sonoma Tree Ordinance

The City of Sonoma Municipal Code (Chapter 12.08) preserves significant and protected trees. A significant tree is defined as any tree having a single trunk diameter greater than two inches, and a height of more than six feet. A protected tree is any tree designated to be preserved on an approved development plan or as a condition of approval of a tentative map, a tentative parcel map, or other development approval issued by the city. Mitigation for removal of significant and protected trees may consist of one of the following: (1) tree replacement on-site at a minimum 1:1 ratio and 15-gallon box size; (2) tree replacement on public property if the development site is inadequate in size to accommodate the replacement trees (minimum 1:1 ratio and 15-gallon box size); or (3) an in-lieu payment of $100.00 per 15-gallon replacement tree on condition that all such payments shall be used for tree-related educational projects and/or planting programs of the city (Chapter 12.08.035E).

The City of Sonoma Municipal Code (Chapter 12.09) requires the protection and preservation of heritage trees. A heritage tree is defined as a tree or group of trees that: have historical significance or have taken on the aura of historical appeal; are mutually dependent upon each other for survival; are considered an outstanding specimen of its species; are either individually or collectively 50 inches or more in diameter measured at 24 inches above natural grade; or have been recommended as such by the parks and recreation commission and dedicated and accepted by the city council of Sonoma.

Sonoma County General Plan

The regulatory mechanisms for regional oversight of natural resources in the project area stem from policies contained in the Sonoma County General Plan (Sonoma County, 2008). Relevant goals, objectives and policies from the General Plan pertinent to wetlands and biological resource conservation issues in the project area are presented below.

Conservation of Biotic Resources

GOAL RC-5: Promote and maintain the County's diverse plant and animal communities and protect biotic resources from development activities.

> *Objective RC-5.1*: Identify and encourage protection of areas with important wildlife habitats and woodland resources.
>
> *Objective RC-5.2*: Encourage the use of native plants in landscaping to reduce the risk of introducing exotic plant species into wildlife areas.
>
> *Objective RC-5.3*: Recognize and preserve the Laguna de Santa Rosa and the San Pablo Bay area as biotic resource areas and historic water retention basins of particular significance to Sonoma County's environment.
>
> *Objective RC-5.4*: Identify important valley oak habitat areas and protect and enhance valley oaks and valley oak woodlands in these areas.

Policy RC-5a: Apply the "Resources and Rural Development" land use category where it is the County's intent to manage and conserve natural resources, including wildlife and vegetation habitats while allowing a compatible level of residential development.

Policy RC-5b: On discretionary projects, use native or compatible non native species to the extent possible for landscaping. Discourage use of exotics, such as pampas grass and scotch broom.

Policy RC-5c: Make the preservation of significant native oaks and other native trees a primary consideration in the review of development projects.

Policy RC-5e: Encourage landowners to voluntarily participate in the County's Landmark Tree Program.

Policy RC-5f: Designate basins, flood plains, terraces, and alluvial fans that have Clear Lake-Reyes, Haire-Diablo, Huichica-Wright-Zamora, Pajaro, or Yolo-Cortina-Pleasanton soil associations, as identified by soils data from the United States Department of Agriculture, Natural Resources Conservation Service, as important valley oak habitat areas on Figures RC-2a through RC-2i.

Policy RC-5g: Add a Valley Oak Habitat combining district to the zoning ordinance. Rezone to the Valley Oak Habitat combining district any lands designated as important valley oak habitat areas on Figures RC-2a through RC-2i.

Policy RC-5h: Provide for voluntary programs to protect and enhance valley oaks and valley oak woodlands in designated important valley oak habitat areas. Develop and require compliance with standards and guidelines for mitigating losses of valley oaks and valley oak woodlands in designated important valley oak habitat areas.

Protection of Rare and Endangered Species

GOAL RC-6: Identify and protect rare and endangered species and their environment.

Objective RC-6.1: Identify the locations of rare and endangered plants and animals.

Objective RC-6.2: Require that any development on lands containing rare and endangered species be done in a manner which protects the resource or mitigates adverse impacts. The County shall use the following policies in addition to those of the Open Space Element, to achieve the above objectives:

Policy RC-6a: Maintain and update the "Biotic Resource" data maps which show the locations of known rare and endangered species, and use them in the environmental review process for development permits.

Policy RC-6b: Protection for rare and endangered species wetlands and other biotic resources not indicated on Figure OS-3 on page 183 shall be accomplished through compliance with applicable state and federal law.

Policy RC-6c: Notwithstanding the densities shown on the land use maps, provide for creation of separate parcels of land where necessary to establish sites for the preservation of rare and endangered species and other biotic resources.

Protection and Conservation of Marine Fishery and Harbor Resources

GOAL RC-7: Protect and conserve the quality of ocean, marine and estuarine environments for their scenic, economic and environmental values.

Objective RC-7.1: Promote protection for the native marine and shoreline plant and animal communities along the Pacific coastline and San Pablo Bay shoreline.

Policy RC-8c: Use the policies of the Sonoma County Coastal Plan to protect wetlands, estuaries, and other coastal resources.

Protection and Conservation of Freshwater Fishery Resources

GOAL RC-8: Encourage effective management of freshwater fishery resources and balance competing agricultural, development, and mining needs with protection of the stream environment.

Objective RC-8.1: Identify sources of sediment and erosion and minimize their impact on local water courses.

Objective RC-8.2: Manage riparian corridors along streams to provide protection for fish habitat.

Policy RC-8c: Design public and private projects to minimize damage to the stream environment and to maintain instream flows.

Policy RC-8d: Avoid substantial alteration of the stream channel and riparian vegetation in the design of flood control projects on streams with substantial natural areas.

Policy for Critical Habitat Areas

GOAL OS-4: Identify critical habitat areas and assure that the quality of these natural resources is maintained and not adversely affected by development activities.

Objective OS-4.1: Designate important wetlands, marshes and other critical habitats and maintain low intensity land uses in these areas.

Objective OS-4.2: Establish development guidelines to protect designated critical habitat areas.

Policy OS-4a: Add a Biotic Resources combining district to the zoning ordinance.

Policy OS-4b: Rezone to the Biotic Resources combining district any lands designated as a critical habitat area.

Policy OS-4c: Require the preparation of a biotic resource assessment to develop mitigation measures if the Planning Director determines that a discretionary project could adversely impact a designated critical habitat area.

Policy OS-4d: Establish building envelopes to avoid designated critical habitat areas on tentative maps.

Policy OS-4e: Require on building permits a minimum setback of 50 feet from the edge of any wetlands which are within a critical habitat area. Exempt existing farm buildings and allow them to be expanded or modified.

Policy for Riparian Corridors

GOAL OS-5: Provide protective measures for riparian corridors along selected streams which balance the need for agricultural production, urban development, timber and mining operations, and flood control with preservation of riparian values.

Objective OS-5.1: Classify important streams with native vegetation as "riparian corridors". Develop guidelines to protect and manage these areas as valuable resources.

Policy OS-5c: Establish streamside conservation areas, measured from the top of the higher bank as determined by SCWA, for designated riparian corridors as follows:

1) Urban Riparian Corridors: 50'
2) Russian River Riparian Corridor: 200'
3) Flatland Riparian Corridors: 100'
4) Upland Riparian Corridors: 50'

Policy OS-5e: Allow or consider allowing the following uses within any streamside conservation area: 1) Timber operations conducted in accordance with an approved timber harvest plan; 2) Streamside maintenance; 3) Road crossings and street crossings, utility line crossings; 4) Mining operations conducted in accordance with the County Surface Mining and Reclamation Ordinance; 5) Permitted summer dams; 6) Grazing and similar agricultural production activities not involving structures or cultivation; 7) Agricultural cultivation; 8) Vegetation removal as part of an integrated pest management program administered by the Agricultural Commissioner; 9) Creekside bikeways, trails and parks within urban riparian corridors; 10) Development authorized by waiver under OS-5f.

Policy OS-5f: Prohibit, except as allowed by OS-5e, structures, roads and utility lines and parking lots within any streamside conservation area. Consider waiver of this prohibition if: 1) it makes a lot unbuildable and vegetation removal is minimized; 2) no significant disturbance of riparian habitat would occur, or 3) the use involves only the maintenance, restoration or minor expansion of an existing structure. A biotic resource assessment may be required prior to issuance of a waiver.

Sonoma County Code

Sonoma County Tree Ordinance. The Sonoma County Tree Protection and Replacement Ordinance No. 4014 (County Code Article IV, Section O) sets preservation and protection standards for protected trees with a 9-inch or greater diameter at breast height (Sonoma County, 2006a). Protected trees include big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii*), madrone (*Arbutus menziesii*), oracle oak (*Quercus morehus*), Oregon oak (*Quercus garryana*), redwood (*Sequoia sempervirens*), valley oak (*Quercus lobata*), California bay (*Umbellularia californica*) and their hybrids (Article 1, Section 26C-12). Only mature valley oaks are considered a protected tree of special significance. The number and size of replacement

plantings is calculated using one of the two arboreal value charts as instructed in the ordinance. Arboreal Value Chart #1 requires analysis to be completed in the construction area and requires 100 percent replacement or in lieu fees. Arboreal Value Chart #2 requires analysis of the entire site but allows for removal of up to 50 percent of the arboreal value. Compensation for the loss of greater than 50 percent requires replacement through use of the chart.

The Sonoma County Ordinance No. 4991, County Code Chapter 26, Article 67 protects valley oak trees and valley oak woodlands within the Valley Oak Habitat district boundaries. This ordinance requires mitigation for removal of any large valley oak measuring sixty inches or greater at diameter breast height[1] within the Valley Oak Habitat district boundaries. Mitigation for tree removal may be in the form of (1) tree replacement by planting valley oak seedlings on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks; (2) retaining other valley oak trees on the subject property; (3) a combination of measures (1) and (2); or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the County.

The Sonoma County Ordinance No. 3651, County Code Chapter 26D preserves heritage and landmark trees that have been nominated and accepted by the County as heritage or landmark trees. This ordinance requires the protection and preservation of heritage and landmark trees.

CEQA Implementation. Sonoma County Code Chapter 23A, the Environmental Quality Ordinance of Sonoma County, discloses to the public the reasons why decision makers approve a project subject to CEQA review in the manner chosen; defines the duties of the County Clerk, the Lead Department, the Committee, and the Planning Director as they relate to CEQA; and defines the County's duties as a responsible agency under CEQA.

Novato SD

City of Novato General Plan

The regulatory mechanisms for regional oversight of natural resources in the project area stem from policies contained in the Novato General Plan (Novato, 2005). The Novato General Plan combines the requirements for the Open Space and Conservation Element into one chapter entitled *Environment.* Relevant goals, objectives and policies from the General Plan pertinent to wetlands and biological resource conservation issues in the project area are presented below.

> *Policy 1: Ecology of Creeks and Streams*. Preserve and enhance the ecology of creeks and streams.
>
> - *Program 1.1*: Establish a Stream Protection Zone for watercourses shown on EN Map 1 and their significant tributaries. The width of the Stream Protection Zone shall include the watercourse itself between the tops of the banks (existing height) and a strip of land extending 50 feet laterally outward from the top of each bank.

[1] A valley oak may have multiple trunks which stem from the same root mass. The diameter around the cluster of trunks (cumulative diameter) would be measured as the diameter breast height (Helfrich, 2006).

Include provisions to extend the Stream Protection Zone where critical habitat areas and riparian vegetation exist and can be restored, wherever feasible, or to reduce the zone if physical conditions so warrant. Establish standards to protect riparian habitat, water quality, provide long-term flood management and establish continuous wildlife corridors. Require a permit for any excavation, filling, or grading; removal or planting of vegetation; construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in the Stream Protection Zone. Permits shall include mitigations to protect wildlife and to protect, enhance, and restore native vegetation. The permit shall take into account aesthetic, scenic, environmental, and recreational impacts or benefits.

Policy 2: Vegetation in Watercourse Areas. Protect vegetation in watercourse areas.

- *Program 2.1*: Require mitigation for loss of riparian vegetation. On-site mitigation is preferred wherever possible.
- *Program 2.2*: Encourage planting of native vegetation and discourage planting of exotic, invasive vegetation.
- *Program 2.3*: Develop educational programs to inform property owners about protecting native vegetation in watercourse areas.

Policy 3: Wildlife Habitat. Endeavor to preserve and enhance wildlife habitat areas in watercourse areas and control human use of these areas as necessary to protect them.

- *Program 3.1*: Refer for comment to the State Department of Fish and Game and Marin County Flood Control District any grading, filling, or construction proposal that would alter a watercourse shown on EN Map 1.

Policy 4: Erosion Control. Minimize soil disturbance and surface runoff in the Stream Protection Zones. Pursuant to the City's grading ordinance, work in and adjacent to the zones shall be conducted during the dry season only, at times when the Community Development Department determines that surface runoff will be minimal or containable.

Policy 5: Habitat Restoration. Restore damaged portions of riparian areas to their natural state, wherever feasible.

- *Program 5.1*: Continue to participate in the Petaluma River project to restore marshland habitat and provide public access as long as it does not adversely affect wildlife habitat.
- *Program 5.2*: Prohibit further degradation and require restoration of previously-degraded riparian areas as a condition of development approval when restoration is feasible, taking into account the project's size and cumulative impacts.
- *Program 5.3*: Encourage riparian restoration as part of permit approval.

Policy 6: Public Access. Manage public access to watercourses shown on EN Map 1 in a manner that will not degrade the habitat.

- *Program 6.1*: Develop guidelines for public access to watercourse areas. Include guidelines dealing with appearance and view preservation.
- *Program 6.2*: Evaluate proposals for trails and waterway access relative to potential impact on habitat value. Consequences such as wetland impacts, removal or damage

to trees or other habitats, or invasion by domestic animals should be avoided. Where avoidance is not possible, alternative access should be sought.

Policy 7: Water Quality. Encourage protection of water resources from pollution and sedimentation, and preserve their environmental and recreation values.

- *Program 7.1*: Develop practices to protect water quality and natural ecosystems in the Stream Protection area.

Policy 9: Determination of Wetlands. Recognize the U.S. Army Corps of Engineers (ACE) as the designated permitting agency that regulates wetlands. In regulating wetland activities, the ACE consults with other agencies and organizations including but not limited to U.S. Fish and Wildlife and State Department of Fish and Game.

- *Program 9.1*: The City shall establish programs and ordinances that develop a process for determining, regulating and permitting wetlands.

Policy 10: Wetlands Ecology. Preserve and enhance wetlands ecology.

- *Program 10.1*: Establish Wetland Protection Standards for wetlands as defined in EN Policy 9. Include provisions to extend the Wetlands Protection area where critical habitat areas (including uplands) and riparian vegetation exist or to reduce the area if physical conditions so warrant. Establish standards and require a permit for any excavation, filling, or grading; removal or planting of vegetation; construction, alteration, or removal of any structure; or alteration of any embankment that is proposed in or near a Wetland area. Permits shall include mitigations to protect wildlife and to protect and replace native vegetation, and shall take into account aesthetic, scenic, environmental, and recreational benefits.
- *Program 10.2*: Require development plans to avoid wetlands to the maximum extent feasible. If development is permitted within wetlands, require mitigation at 2:1 replacement to provide wetland habitat of the same type as the lost habitat. Require off-site mitigation of wetlands impacts in cases where on-site mitigation is not possible. Off-site mitigation sites should be as close to the project site as possible.
- *Program 10.3*: Encourage wetlands restoration where appropriate.

Policy 11: Bayland Overlay Zone. Establish a Bayland Overlay Zone to preserve and enhance natural and historic resources, including wildlife and aquatic habitats, tidal marshes, seasonal marshes, lagoons, wetlands, agricultural lands and low-lying grasslands overlaying historic marshlands. The Bayland Overlay Zone will be established as part of the adoption of the General Plan and all policies related to this zone (EN Policies 11-17) are effective with Plan adoption.

- *Program 11.1*: Revise the Zoning Ordinance to include a Bayland Overlay Zone consisting of bayland areas as shown on EN Map 2, excluding land that has been filled or legally developed. Permit uses in accordance with the underlying General Plan designation and Zoning District that are consistent with the other specific regulations pertaining to the Overlay Zone, recognizing the range of values which may characterize different areas.

Policy 12: Bayland Area Protection. Regulate development in the Bayland Overlay Zone so that it does not encroach into wetlands or sensitive wildlife habitats, provided that this

regulation does not prevent all use of a property. Discourage human activity that damages fisheries, or habitat for birds, fish or other wildlife.

- *Program 12.1*: All new development within the Bayland Overlay Zone shall provide a buffer between wetlands and the development. The buffer shall be of sufficient width to protect wetland habitat values. The buffer will be commensurate with the habitat value and it will be established as part of a site-specific decision.
- *Program 12.2*: Encourage protection of migratory and other birds, anadromous fish and endangered species.

Policy 14: Tidal Areas. Cooperate with State and Federal agencies to ensure that areas subject to tidal action remain in their natural state.

Policy 18: Species Diversity and Habitat. Protect biological resources that are necessary to maintain a diversity of plant and animal species.

- *Program 18.1*: Develop standards and mitigations to help ensure protection of native plant and animal species and their habitat, including the preservation and enhancement of wildlife corridors and edge habitats.

Policy 19: Special Status Species. Cooperate with State and Federal Agencies to ensure that development does not substantially adversely affect special status species appearing on the State or Federal list for any rare, endangered, or threatened species. The environmental documentation will screen for the Federal Candidate Species, plants listed on lists 1A, 1B, or 2 of the California Native Plant Society (CNPS), inventory of rare and endangered vascular plants of California and animals designated by CDFG as species of special concern or their current equivalent.

Policy 23: Native Woodlands. Maintain age and species diversity of native woodlands, and preserve the health of trees and other vegetation wherever feasible.

- *Program 23.1*: Require replacement of native trees/woodland with native species when projects result in the loss of woodland habitat.

Policy 24: Trees on Public Land. Protect native woodlands and significant trees on public lands by planting additional trees needed to maintain age and species diversity, ensuring the proper and timely pruning of trees, and removing non-native species, particularly if they are invasive.

- *Program 24.1:* Consider adopting a Tree Management Program, establishing varieties, size and spacing requirements, maintenance standards, and priority planting schedules.

Policy 25: Trees on Private Property. Encourage and, where appropriate, require actions by private property owners to protect the health of native woodlands and trees.

- *Program 25.1*: Continue requiring the planting of trees in parking lots to provide shade and visual screening.
- *Program 25.2*: Develop educational programs to inform property owners of good tree management practices.
- *Program 25.3*: Adopt a tree preservation ordinance that incorporates the City's Heritage Tree Ordinance.

Policy 26 Trees in New Development. Require that the site planning, construction and maintenance of development preserve existing healthy trees and native vegetation on site to the maximum extent feasible. Replace trees and vegetation not able to be saved.

- *Program 26.1*: Consider amending the City's Zoning Ordinance and other regulations to improve policies for tree and native vegetation preservation, planting, maintenance, and replacement.

City of Novato Municipal Code

Tree Ordinance. The City of Novato promotes the conservation of native trees on private lands and during development. Chapter 19 Section 19.39 applies to proposed development and new land uses on properties with native tree, forest or woodland resources. Land use application permits must include a tree inventory site plan showing the locations and types of all existing trees greater than three inches in diameter, and noting which trees are proposed to be removed. Where tree removal cannot be avoided by design measures, a minimum of 75 percent of existing native trees shall be retained. Trees adjacent to riparian corridors, wetlands or seasonal wetlands shall be protected and preserved with buffer zones in compliance with Section 19.35 Waterway and Riparian Protection and Section 19.36 Wetland Protection and Restoration. Mitigation will occur at a ratio of not less than 3:1, from local genetic stock. Onsite mitigation is preferable, and any off-site mitigation must occur within the Novato Watershed.

Chapter 17, Section 17-1.1 protects heritage trees within the city. The City of Novato defines a heritage tree as any woody plant characterized by having a major trunk or trunks of a diameter of 24 inches (circumference of 75 inches) or more measured at 24 inches above existing grade. The alternation or removal of a heritage tree within the city requires a permit.

Marin County General Plan

Marin County's applicable General Plan protective measures are described under the LGVSD area, above.

Marin County Code

Marin County's applicable County Code protective measures are described under the LGVSD area, above.

Napa SD

City of Napa General Plan

GOAL NR-1: To manage the natural resources, wetlands and open space areas in and around the city to preserve and enhance plant and wildlife habitats.

Policy NR-1.1: The City shall protect riparian habitat along the Napa River and its tributaries from incompatible urban uses and activities.

Policy NR-1.2: The City shall identify existing wildlife habitat corridors and seek to protect them from being severed or significantly obstructed.

Policy NR-1.3: The City shall encourage the planting of native plant species in natural habitats.

Policy NR-1.4: The City shall review all future waterway improvement projects (e.g., flood control, dredging, private development), as well as all projects that are within 100 feet of the waterway, to ensure that they protect and minimize effects on the riparian and aquatic habitats. The City shall also encourage native plantings along the river and creek banks to stabilize the banks, reduce sedimentation, reduce stormwater runoff volumes, and enhance aquatic habitats.

Policy NR-1.5: The City shall pursue federal and state funding to restore and enhance wetland, riparian, and fish habitats.

Policy NR-1.6: The City shall require as a condition of approval that development provide protection for significant on-site natural habitat whenever possible.

Policy NR-1.7: During development review, the City shall endeavor to identify and protect significant species and groves or clusters of trees on project sites.

Policy NR-1.8: The City shall provide controlled access points in designated areas to prevent unrestricted public access to riparian habitat on public lands.

Policy NR-1.11: The City shall continue to enforce the Fire Prevention Abatement program to protect riparian habitat from destruction by fire.

Policy NR-1.13: The City shall require that the composting and recycling of landscape maintenance debris be located so as to avoid adverse impacts on wetland, riparian, and fish habitat.

Implementation Programs

Policy NR-1.A: The City shall review and modify as necessary existing regulations for the conservation and management of marsh, wetland, riparian, wildlife and plant habitats to ensure consistency with the General Plan.

Policy NR-1.B: The City shall continue to rezone properties in marsh, wetland, oak woodland and riparian habitats to be subject to the provisions of the Conservation and Safety Regulations of the City's Zoning Ordinance.

Policy NR-1.C: The City shall develop guidelines and regulations to encourage new development to protect and enhance on-site habitat and incorporate it into the project. The City will allow the creation of off-site habitat on public or private land as an alternative if it is demonstrated to be infeasible to incorporate significant habitat protection into plans.

Policy NR-1.E: The City shall continue to require implementation of sensitive construction practices that minimize erosion and sedimentation, protect native and other important trees, restrict riparian encroachment, and maintain unobstructed drainageways.

GOAL NR-2: To recognize and support the preservation of rare, endangered and threatened species and of other unique and fragile biological environments.

Policy NR-2.1: The City shall maintain information about the location of endangered, threatened, and rare species.

Policy NR-2.2: The City shall encourage the County to preserve unique and fragile biological environments on unincorporated lands outside the Rural Urban Limit.

Policy NR-2.3: The City shall continue to refer development proposals in sensitive areas to state and federal wildlife agencies for review and comment.

Policy NR-2.4: When acting as a project proponent or when reviewing proposals for private projects requiring discretionary review by the City, the City shall ensure that its environmental review documents identify any feasible means of avoiding any net loss of habitat or of habitat value for endangered, threatened, and rare species. Where necessary or desirable, such avoidance can be achieved through off-site mitigation measures. As part of the environmental review, the City shall determine whether the Department of Fish and Game, in implementing the California Endangered Species Act, and/or the United States Fish and Wildlife Service, in implementing the Federal Endangered Species Act, will likely require mitigation sufficient to avoid any net loss of habitat or of habitat value for such species. Where these agencies are likely to require such a level of mitigation, the City may formulate its own mitigation measures so as to minimize the extent to which those measures duplicate the efforts of these agencies.

Implementation Programs

Policy NR-2.A: The City shall update its CEQA Initial Study Form to include specific questions that trigger review of the potential for impact on endangered species for sensitive habitat known to exist in the City of Napa.

Policy NR-2.B: The City shall prepare and maintain a set of resource maps identifying known locations of rare and endangered species and sensitive habitats for staff use as a reference during the Initial Study review of individual projects.

GOAL NR-4: To protect and enhance surface water and ground water quality.

Policy NR-4.7: Encourage design of projects to avoid covering creeks and drainageways whenever possible.

City of Napa Municipal Code

Tree Ordinance. The City of Napa Municipal Code Title 12 Chapter 12.45 protects significant trees and native trees within city limits. The following native trees are protected: valley oak, coast live oak, black oak, California bay and black walnut with a DBH of 12 inches or greater; blue oak with a DBH of 6 inches or greater; and coast redwood with a DBH of 36 inches or greater. Tree pruning and removal requires a valid permit. Mitigation for removal of significant and protected trees may consist of one of the following within 60 days of removal: (1) tree replacement on-site at a minimum 2:1 ratio and 15-gallon box size, per each six inches or fraction thereof of impacted native tree; (2) tree replacement on public property if the development site is inadequate in size to

accommodate the replacement trees (minimum 2:1 ratio and 15-gallon box size); or (3) an in-lieu payment of a sufficient amount per 15-gallon replacement tree on condition that all such payments shall be used for tree-related educational projects and/or planting programs of the city.

Napa County General Plan

The Napa County Code sets forth environmental protections for riparian zones (Title 16, Chapter 16.04). A riparian zone is defined as an area extending laterally outward fifty feet beyond the top of banks on either side of a watercourse channel, except that the riparian zone of the Napa River from the southern boundary of the county to Zinfandel Lane shall include an area extending laterally outward one hundred feet beyond the top of the banks on either side of its channel. Activities within riparian zones are regulated by permit for the purpose of preserving fish and game habitats, preventing or reducing erosion, maintaining cool water temperature, preventing or reducing siltation, and promoting wise use and conservation of county woodland and wildlife resources. The following regulations shall apply to all proposed activities within any riparian zone:

A. The proposed activity will not, with regard to the riparian zones along a channel, remove more than the following:

    1. A native tree eighteen inches DBH per one hundred feet of zone on each side of the floodplain, or
    2. Three native trees twelve inches DBH per one hundred feet of zone on each side of the floodplain, or
    3. Six native trees six inches DBH per one hundred feet of zone on each side of the floodplain, or
    4. Five hundred square feet of riparian cover beyond ten feet from top of the bank;
    5. The temporary removal of a strip of riparian cover not more than fifteen feet wide beyond ten feet from the top of the bank, where replanting of such a strip is a part of the project;

B. Will not involve the locating of any facility or structure within ten feet from the top of the bank;

C. Will not result in a cut or fill slope that would remain unprotected by slope reseeding and bank stabilization replanting at the end of the project.

APPENDIX 3.6
Land Use and Agriculture

Other Jurisdictions, General Land Use Plans

General plans are long-range policy documents to guide the use and future development of private and public lands within the boundaries of a city or county. General plans represent a jurisdiction's official position on issues such as development and resource management. California planning law (Government Code Sections 65302–65303) requires that each city or county in the state develop and adopt a general plan that addresses the following subjects: land use, circulation, housing, conservation, open space, safety, and noise. In essence, general plans represent the visions of local governments for their communities' future, and provide the policy framework intended to realize those visions.

Figure 3.6-1 shows the counties, unincorporated areas, and local city jurisdictions in which Project facilities would be constructed or upgraded. The following factors affect the application of these communities' general plans to the Project:

- *Local Agency Project Approval*. No local agency approvals would be needed for adoption of the programmatic portions of the Project. Proposed Project Specific and future individual projects could, in select cases, require encroachment permits from local agencies. Current and future project-level CEQA review of the program level projects will provide more detailed and up-to-date information on the approvals required for each project.

- *Building and Zoning Ordinances*. Building and zoning ordinances represent the most specific expressions of general plan goals, objectives, and policies. State law and judicial interpretation of state law mutually exempt public utilities and special-purpose local agencies (such as water districts) from complying with local building and zoning ordinances when locating or constructing facilities for the production, generation, storage, treatment, or transmission of water and wastewater (California Government Code Section 53090 et seq). The North Bay Water Reuse Authority (NBWRA) is comprised of several wastewater utility districts, and is therefore exempt from complying with the building and zoning ordinances of other cities and counties.

- *Local Government Notification and Consistency Determination Requirements*. California Government Code Section 65402(c) requires that the Authority and its member agencies inform cities and counties of its plans to construct projects or acquire or dispose of property. The planning agencies of the affected local cities and counties have 40 days to determine project consistency with their general plans; these consistency determinations are advisory to the Authority rather than binding. Approval of the Programmatic portions of the project would not trigger the requirements of Section 65402(c), however, future implementation of individual project level components would. The Authority and its

> member agencies would notify local governments of Project facilities to be constructed or upgraded within the city or county as part of any project-level environmental review process. Prior to project implementation, local governments would be notified pursuant to California Government Code Section 65402(c). If the planning agency disapproves the location, purpose or extent of such acquisition, disposition, or the public building or structure, the disapproval may be overruled by the Authority and its member agencies.

Notwithstanding the above, where planed Project facilities are sited outside of lands owned by the Authority and its member agencies, the Authority seeks to work cooperatively with affected local jurisdictions to avoid conflicts with local land use plans and building and zoning codes. For the purposed of the Project with respect to the discussion of land use, a key issue for local agencies that are affected by project construction and operation is whether or not the project adequately addresses community goals regarding water conservation and service for existing and future agricultural, urban, and environmental uses.

The intent of the general plans prepared by the affected cities and counties is to preserve and improve the quality of life for its citizens and to consider growth in a manner that appropriately reflects the community's values; an adequate, reliable water supply is a chief public service needed to accomplish these goals.

A second issue of importance to local agencies is whether implementation of the Project would be consistent with community goals regarding resource protection. As discussed in Chapter 2, the purpose of the proposed Project is to reduce the reliance on local and imported surface and groundwater and to reduce the discharge of treated wastewater to the San Pablo Bay. **Table 3.6-1** presents an overview of general plan policies and goals that address the protection of environmental resources or the mitigation of environmental impacts. All of the issues identified in the table are addressed in this EIS/EIR in one form or another; some specific policies are used as criteria to determine the significance of physical effects on the environment. **Table 3.6-2** lists the significance criteria that directly relate to consistency with plans and policies and indicates where in this chapter the reader can find the impact evaluation.

Throughout this EIS/EIR, local planning documents and relevant policies are discussed to provide additional information to the public, other agencies, and decision-makers, although these plans and policies may not be directly applicable to the NBWRA and the proposed Project and alternatives.

City and County General Land Use Plans

LGVSD and Novato Sanitation District Service Areas

Marin Countywide Plan

Marin County has long maintained a tradition of environmental planning balanced with the recognition of the essential linkages between land use, transportation, and the need for affordable housing (Marin Countywide Plan 2020). The Agricultural and Natural Systems Element and the Built Environment Element both address Land Use issues and establishes policies for guiding

TABLE 3.6-1
SUMMARY OF GENERAL PLAN POLICIES OF OTHER JURISDICTIONS BY CEQA RESOURCE TOPIC

Resource Topic	Summary Description
Land Use and Visual Quality	General plan goals, policies, and implementation actions related to land use generally call for the use of an environmental review process to minimize potential impacts of projects, and strive to minimize the impact of construction projects on surrounding land uses.
Geology, Soils, and Seismicity	General plan policies related to geology, soils, and seismicity call for appropriate placement, design, and construction of utilities to minimize damage from seismic and geologic hazards and for the implementation of extra precautionary measures to restore utility services following earthquakes. Effective mitigation measures are required for utilities in areas prone to geologic hazards such as soil erosion, liquefaction, and slope failure.
Hydrology and Water Quality	General plan policies related to hydrology and water quality generally deal with the utilization of erosion control measures and storm water quality controls, the protection of riparian zones, and the conservation of water resources in the natural environment. Dam maintenance and monitoring are prescribed in areas potentially subject to dam failure.
Biological Resources	General plan goals, policies, and implementation programs related to biological resources are aimed at the protection of sensitive wildlife habitat and plants, including wetlands, riparian zones, native hardwoods, open space, and sensitive habitats for rare and endangered fish and wildlife species. Heritage tree programs specify guidelines for the avoidance, protection, and, when necessary, replacement of heritage trees. Use of the CEQA/NEPA process to ensure that detrimental biological impacts do not occur is prescribed.
Cultural Resources	General plan policies related to cultural resources prescribe procedures to prevent detrimental impacts on archaeological/paleontological sites during construction, and the use of good planning practices to preserve cultural and historic heritage.
Traffic, Transportation, and Circulation	General plan policies related to traffic, transportation, and circulation generally require an impact analysis of new development proposals on traffic and encourage the use of utility corridors and river/ creek rights-of-way for nonmotorized transportation modes such as bicycle and pedestrian facilities.
Air Quality	General plan policies related to air quality call for air quality impact analyses for proposed projects and the use of air quality controls, such as dust abatement measures during construction, to reduce air quality impacts.
Noise and Vibration	General plan policies related to noise and vibration generally establish enforceable noise thresholds, require the use of noise suppression techniques during construction activities, encourage the incorporation of noise reduction techniques in new structures, and call for compliance with noise ordinances during facility operation.
Public Services and Utilities	General plan policies related to public services and utilities call for safeguarding utility lines from rupture or malfunction from natural or manmade hazards.
Recreational Resources	General plan policies related to recreational resources encourage the use of utility corridors and rights-of-way for recreational uses such as parks, pedestrian and bicycle trails, open space, and other recreational facilities and programs.
Agricultural Resources	General plan policies related to agricultural resources encourage utilities to route their facilities along property lines to prevent interference with agricultural operations.
Hazards	General plan policies related to hazards call for the proper handling, use, disposal, and transport of hazardous materials and the placement, design, construction, and protection of critical utilities from potential disasters.
Energy Resources	No relevant general plan policies related to energy resources were identified.

TABLE 3.6-2
SIGNIFICANCE CRITERIA RELATED TO CONSISTENCY WITH PLANS AND POLICIES BY ENVIRONMENTAL RESOURCE TOPIC

Resource Topic	Significance Criterion
Geology, Soils, and Seismicity (Section 4.4)	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.
Biological Resources (Section 4.6)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.
Traffic, Transportation, and Circulation (Section 4.8)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.), or cause a substantial increase in transit demand that cannot be accommodated by existing or proposed transit capacity or alternative travel modes).
Noise and Vibration (Section 4.10)	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. For a project located within an area covered by 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.

land use and development in accordance with planned future growth, including the distribution, location, and extent of land uses and their associated standards of population density and building intensity with respect to water resources, agricultural resources and community development.

Water Resources

The Water Resources section of the Natural Systems Element contains Land Use goals and policies that are relevant to the proposed Project. Goals WR-1 and WR-2 reflect the Marin County Watershed Management Plan's recommendations and aim to preserve and enhance healthy watersheds and maintain adequate water supplies.

Agriculture

The primary objectives of the agriculture goals and policies identified within the Natural Systems and Agricultural Element are preserving agricultural lands and preventing subdivision of lands under agricultural production. The County's agricultural policies presented within the element recognize the value of continued agriculture for regional food and fiber and also as an industry for the diversified county economy. Goals AG-1 and AG-2 reflect the steps being taken to preserve agricultural lands and resources and improve the viability of agricultural resources through out the County:

Community Development

The Community Development Element establishes policies for land use designations and boundaries, growth, infrastructure, and services, and sets forth a town design program. Goal CD-4 discusses the need to coordinate Planning efforts between local districts, including special districts. Goal CD-5 and policies CD-5.d and e discuss effective growth management as related to

transportation, water, sewer, wastewater facilities, and other public services that are relevant to the proposed project.

City of San Rafael General Plan

The City of San Rafael General Plan 2020 provides a united vision of the future of the community with goals to preserve San Rafael's 'hometown' character, improve the appearance of the neighborhoods, sustain the diversity of the local economy, and treasure open spaces. The Land Use, Infrastructure and Open Space Elements contain objectives and policies that are relevant to the Proposed Project. Policy LU-1 of the Land Use Element emphasizes the planning of the circulation system and infrastructure to provide capacity for the total development expected by 2020. Policies I-9 and I-13 of the Infrastructure I-9 encourage the Marin Municipal Water District to develop cost effective strategies for adequate long-term water supplies and encourage additional water recycling at Las Gallinas Valley Sanitary District and the Central Marin Sanitation Agency to investigate recycling and reuse of its treated wastewater. Policy OS-6 discourage utilities in open space areas. Necessary utilities in open space should be located and designed to minimize harm to the area's environmental and visual quality while policy CON-20 encourages water-conserving practices in businesses, homes and institutions and increase the use of recycled water.

City of Novato General Plan

The 1996 Novato General Plan is a statement of the community's vision of the future. It is a long-range and comprehensive plan that coordinates all major components of the community's physical development for the next twenty years. The Land Use Element contains objectives, policies, and programs for land use designations, infrastructure and public services, constraints analysis, the City's Sphere of Influence, and inter-jurisdictional coordination. Early public comments in the General Plan Update process created a foundation of goals adopted by the City Council. The goals applicable to the proposed Project are as follows:

> **Goal 1:** Preserve and improve the quality of life in Novato. Conserve and where appropriate restore the natural environment and strive for high quality in the built environment that complements the natural environment.
>
> **Goal 5:** Preserve, protect and enhance the natural setting throughout the community, including creeks, hillsides, ridgelines, woodlands, wildlife, native plants, wetlands and open space.
>
> **Goal 6:** Preserve bay front lands and diked wetlands for agriculture, resource restoration, conservation and recreation.
>
> **Goal 11:** Manage growth by requiring the coordination of development with adequate infrastructure, public facilities, public services and promoting conservation, reuse and recycling strategies while meeting the needs of the community with the limited land available for development.

SVCSD

Sonoma County General Plan

The Sonoma County General Plan provides guidance for future growth, development and conservation of resources in a manner that is consistent with the goals and the quality of life described by County residents (Sonoma County 1998).

Land Use Element. The Land Use Element establishes policies for guiding land use and development in accordance with planned future growth, including the distribution, location, and extent of land uses and their associated standards of population density and building intensity. The Land Use Element provides goals and objectives that are relevant to the Proposed Project. Goals LU-1, LU-2, LU-8 focus on accommodating growth in Sonoma County with consideration of environmental constraints, capacities of public services and maintaining agricultural lands. The General Plan has objectives specific to the Sonoma Valley (Objectives LU-18.1, LU-18.2) that seek to monitor and limit development within the City of Sonoma.

Agricultural Resources Element. The Agricultural Resources Element establishes policies that protect the stability and productivity of agricultural lands and the agricultural industry in the County. This element provides goals and objectives that are related to the Proposed Project. Goals AR-1, AR-5, AR-8 seek to promote the agricultural industry and facilitate agricultural production. Goal AR-8 has objectives to support the Williamson Act program (Objective AR-8.1) as well as participate with wastewater generators to establish programs for agricultural reuse of treated wastewater (Objective AR-8.2, Policy AR-8f).

Resource Conservation Element. The Resource Conservation Element provides for the conservation of natural resources including water, forests, soils, rivers, harbors, fisheries, wildlife, minerals, and other natural resources. It supports the county's economic base by promoting the production and use of the county's resources. It guides land use decisions that will contribute to the long term maintenance of resource production. Goal RC-3 calls for the conservation, enhancement, and management water resources to assure an adequate long term supply of water for domestic, fishing, industrial and agricultural use.

City of Sonoma General Plan

The City of Sonoma General Plan provides a collective vision of the community and general guidance for growth and development in the City and its Sphere of Influence, including the preservation of balance between agriculture, open space, business considerations, visitor activities, environmental/recreational/historical/cultural resources, and residential needs (City of Sonoma, 2006).

Community Development Element. The Community Development Element establishes policies for land use designations and boundaries, growth, infrastructure, and services, and sets forth a town design program. Goals CDE-3 and CDE-6 discuss joint planning efforts with other public agencies in the Sonoma Valley and issues related wastewater treatment use in the Sonoma valley relevant to the Proposed Project.

Environmental Resources Element. The Environmental Resources Element establishes policies for open space, conservation, and recreation. Goals ER-1 through ER-4 discuss supporting community programs that preserve and promote agriculture, habitat areas and significant environmental resources including surface and ground water supplies and quality and to set an example of sustainability by conserving resources and following green practices in City facilities, services, and projects.

Napa Sanitation District Service Area

Napa County General Plan

The Napa County General Plan summarizes County Planning Goals and objectives; and establishes a balance between diverse, and in some cases, conflicting programs. It helps maintain the compatibility of economic and environmental objectives and provides guidance for the allocation of resources and the preservation of important County values. (Napa County GP) The County conducted a General Plan Update in 2007 which guides development through a 20 year period.

Agricultural Preservation and Land Use Element. The Agricultural Preservation and Land Use Element contains goals and policies related to agriculture and agricultural, watershed, and open space lands; urban-centered growth; residential, commercial, industrial, and public-institutional uses; growth management; and interagency cooperation. Goals AG/LU-1 and AG/LU-7 discuss the preservation of existing agricultural land uses and urge the consideration of environmental or climatic changes, and desired social services when siting public facilities and when considering the design of those facilities. Policy AG/LU-115 notes that the County will work cooperatively with the private and non-profit sectors, cities, special districts, and other local, state, and federal agencies to plan for services and public facilities.

Conservation Element. The Conservation Element contains goals and policies related to open space conservation, natural resources, surface and ground water supplies, water quality, climate protection, and sustainable practices for environmental health. Collectively, the goals, policies, and action items of this element ensure that Napa County's abundant natural areas and extraordinarily high biodiversity will be preserved and enhanced, that the County's air, water, and terrestrial habitats will be protected, and that Napa County will do its part to conserve energy and address local contributions to global climate change. Goal CON-10 promotes the responsible use and conservation of water in order to conserve supplies and ensure an adequate supply of water for future generations. Goal CON-13 promotes the development of additional water resources to improve water supply reliability in Napa County, including imported water supplies and recycled water projects. Policy CON-62 notes that the county will support recycled water for irrigation and non-potable uses to offset dependency on groundwater and surface waters and ensure adequate wastewater treatment capacity.

City of Napa General Plan

The City of Napa 2020 General Plan sets the framework for future growth and development within which Napa can expand while still maintaining the community character and quality of life that are so important to Napa residents. The General Plan emphasizes the need for neighborhood

conservation, containing growth within the rural urban limit, revitalizing the downtown area and maintaining a sustainable economy (City of Napa, 2006). The Land Use and Natural Resource Elements are relevant to the Proposed Project. Goals LU-2 and LU-3 focus on maintaining the Rural Limit (RUL), an urban growth boundary, to support Napa County's agricultural and other resource uses. Goal NR-1 strives to preserve the natural resources, wetlands and open space areas in and around the City of Napa. Goal CS-9.5 discusses the feasibility and use of reclaimed wastewater in appropriate locations to offset the demand for potable water supplies. Goal CS-10.2 supports the continued efforts by the Napa Sanitation District to promote the use of reclaimed wastewater.

Habitat Conservation Plans

The North Bay initiative plans to develop a wetlands resource management plan for the lower portions of the Napa River, Sonoma Creek, and Petaluma River watershed. This area, known as the San Pablo Bay, encompasses more than 50,000 acres of former baylands and marshes, most of which are now agricultural. Bowker has helped to insure that farmers and other landowners are incorporated fully into resource planning efforts by hosting a series of workshops with local government officials and the general public. This initiative has the potential to increase the overall wetlands resource base in California by more than 10 percent.

Regional planning efforts, such as the North Bay Initiative (North Bay Wetlands Protection Program [NBWPP]) and the U.S. Fish and Wildlife Service's (USFWS) Habitat Goals Process are currently being developed. Funded by grants through the EPA, the NBWPP is a voluntary partnership between the BCDC and local governments to develop a comprehensive wetlands protection plan for the North Bay. The goal of the program is to ensure the protection, enhancement, and restoration of North Bay wetlands, while allowing uses such as agriculture that are consistent with wetland values and functions to continue, and limiting other incompatible uses to upland locations. The Bay faces development pressures and land use changes that could seriously compromise the vast mosaic of wetlands, diked historic baylands, and agricultural lands. Urbanization may eliminate some of the best and last remaining opportunities to increase the abundance and diversity of wildlife through the restoration of diked historic baylands. Population growth, new development, and related infrastructure improvements within the Bay watershed may result in the direct loss of wetlands, riparian habitat, and agricultural lands. The planning efforts of the NBWPP focus on reducing conflict, uncertainty, and delays in the wetlands regulatory process by integrating habitat-based natural resource planning, wetland studies, wetland restoration planning (such as the Habitat Goals Process), and state and federal regulatory requirements with local land use planning and zoning.

The NBWPP will provide participating local governments with technical assistance, resource mapping, and baseline information needed to identify and develop comprehensive wetland protection programs.

APPENDIX 3.7
Traffic

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to traffic and transportation and the proposed project.

LGVSD

City of Novato

The City of Novato General Plan Transportation Element promotes alternative modes of transportation, roadway improvements, and traffic improvements throughout the planning area (City of Novato, 2003). As the General Plan focuses on the design and implementation of circulation system improvements, policies in this element do not directly relate to the proposed project.

Chapter XV (15-2) of the City of Novato Municipal Code details the City's regulations regarding the use of roads and the construction of utilities infrastructure, including encroachments. Numerous regulations are applicable to the proposed project, including regulations regarding the use of roadways, the type of vehicles and load sizes allowable on given roadways, encroachment on private property, and the construction of utilities infrastructure (City of Novato, 2008). The municipal code applies to all roads within the City's jurisdiction, and project construction must adhere to all ministerial regulations presented in the Municipal Code.

Unincorporated Marin County

Some of the roads in the project area are under the jurisdiction of Marin County. County policies and regulations regarding the design, use, or obstruction of roadways are detailed in the *Marin County Countywide Plan* The Built Environment (Transportation) Element (Marin County, 2007). The majority of these goals and policy guidelines in The Built Environment (Transportation) Element pertain to the development and planning of roadways and transit systems and therefore are not relevant to the proposed project.

Novato SD

City of Novato

See discussion under LGVSD Service Area, above.

Unincorporated Marin County

See discussion under LGVSD Service Area, above.

SVCSD

City of Sonoma

The City of Sonoma General Plan Circulation Element promotes alternative modes of transportation, roadway improvements, and traffic improvements throughout the planning area (City of Sonoma, 2006). As the General Plan focuses on the design and implementation of circulation system improvements, policies in this element do not directly relate to the proposed project.

Chapter 12.20 of the City of Sonoma Municipal Code details the City's regulations regarding the use of roads and the construction of utilities infrastructure, including encroachments. Numerous regulations are applicable to the proposed project, including regulations regarding the use of roadways, the type of vehicles and load sizes allowable on given roadways, encroachment on private property, and the construction of utilities infrastructure (City of Sonoma, 2008). The municipal code applies to all roads within the City's jurisdiction, and project construction must adhere to all ministerial regulations presented in the Municipal Code.

Unincorporated Sonoma County

Several of the roads in the project corridor are under the jurisdiction of Sonoma County. County policies and regulations regarding the design, use, or obstruction of roadways are detailed in the Sonoma County General Plan Circulation and Transit Element (Sonoma County, 2008). The majority of these goals and policy guidelines in the Circulation and Transit Element pertain to the development and planning of roadways and transit systems and therefore are not relevant to the proposed project.

The *Draft 2009 Countywide Transportation Plan* for Sonoma County provides further guidance for transportation planning and associated goals and policies (SCTA, 2008b). This plan focuses on the design and implementation of improvements to the county circulation system, including roadways, bikeways, and rail service. Therefore, the plan does not include policies relevant to the proposed project.

Napa SD

City of Napa

Portions of the roads in the project corridor are under the jurisdiction of City of Napa. The City of Napa General Plan Circulation Element promotes alternative modes of transportation, roadway improvements, and traffic improvements throughout the planning area (City of Napa, 2007). As the General Plan focuses on the design and implementation of circulation system improvements, policies in this element do not directly relate to the proposed project.

Chapter 12.12 of the City of Napa Municipal Code details the City's regulations regarding the use of roads and the construction of utilities infrastructure, including encroachments. Numerous

regulations are applicable to the proposed project, including regulations regarding the use of roadways, the type of vehicles and load sizes allowable on given roadways, encroachment on private property, and the construction of utilities infrastructure (City of Napa, 2008). The municipal code applies to all roads within the City's jurisdiction, and project construction must adhere to all ministerial regulations presented in the Municipal Code.

Unincorporated Napa County

Most of the roads in the project corridor are under the jurisdiction of Napa County. County policies and regulations regarding the design, use, or obstruction of roadways are detailed in the Napa County General Plan Circulation Element (Napa County, 2008). The majority of these goals and policy guidelines in the Circulation Element pertain to the development and planning of roadways and transit systems and therefore are not relevant to the proposed project.

URBEMIS Construction Assumptions – No Action Alternative

Due to the lack of data on exact construction phasing of the No Action Alternative, a number of assumptions were made to determine worst case annual construction emission associated with construction. These assumptions are outlined below.

Construction of Pipelines

To estimate worst case emission from pipeline construction throughout the project area, it was assumed that each sanitary district would construct pipeline projects concurrently. It was assumed that construction of each pipeline would progress at a rate of 250 feet per day and that work would be completed in 'spreads'. The first spread of equipment would demolish the existing roadway and remove the excavated material. The second spread would excavate the trench required to install the proposed pipeline. The third spread would install the proposed pipeline and the final spread would backfill the trench and re-pave the disturbed portion of the road. It was assumed that work would be completed along a line so each spread would be used each day at different locations along the pipeline. Equipment estimates for each spread are demonstrated in **Table 1** below. It was assumed that each piece of equipment would operate 8 hours per day which represents a conservative analysis.

It is important to note that the equipment counts demonstrated in Table 1 represent the set of equipment used to construct one pipeline. Therefore the total pieces of equipment being utilized in the district the on the worst-case day would be three times the amount of equipment presented in Table 1 (assuming that no new pipeline would be constructed in connection with the LGVSD under the No Action Alternative).

To estimate the amount of material to be exported during demolition of the roadway it was assumed that the asphalt is 1 foot thick. Assuming that a 5 foot wide strip of asphalt is removed, a total of 1250 cubic feet of material would be removed per day (250 feet long x 5 feet wide x 1 foot deep = 1250 cubic feet).

TABLE 1
CONSTRUCTION EQUIPMENT ESTIMATES

Equipment	Demolish Roadway	Excavate Trench	Install Pipe	Re-pave Roadway
Air Compressors			1	
Concrete/Industrial Saw	2			
Cranes			1	
Excavators		1		
Forklifts			2	
Graders		1		
Pavers				1
Paving Equipment				2
Plate Compactors				1
Rollers				2
Rubber Tired Dozers		1		
Tractors/Loaders/Backhoes	2	2	1	1
Water Trucks		1		
Welders			3	
Haul Trucks	1	28		

To estimate the amount of dirt handled during trench excavation it was assumed that the trench would be 6 feet deep by 5 feet wide resulting approximately 7500 cubic feet or roughly 280 cubic yards of excavation each day. It was assumed that all excavated material would be exported and that new soil would be imported to fill the trench. It was assumed that 270 cubic yards of fill would be needed for each 250 foot segment since the pipe will take up a small volume of the trench.

The number of construction work days for the worst case year was determined by dividing the proposed pipe length associated with each WWTP by the estimated number of feet to be completed per day (250 feet). Therefore it was assumed that Novato SD pipeline construction would take approximately 92 days, SVCSD pipeline construction would take approximately 131 days and Napa SD construction would take approximately 74 days.

Construction of New Storage Facilities

It was assumed that excavation of new storage ponds would occur at a rate of approximately 550 cubic yards of material exported per day. Therefore, the excavation of the new 1.5 acre-foot storage facility in the Novato SD would take approximately 5 days each assuming that approximately 2,000 cubic yards of soil is excavated to create a 1.5 acre-foot storage pond. The storage ponds at SVCSD would provide 65 acre-feet of new storage, and would require removal of approximately 100,000 cubic yards of material. At a rate of 550 cubic yards per day this would take approximately 181 work days.

The construction equipment mix assumed to be used for excavation of the proposed storage ponds includes the following: two (2) rubber tired dozers, two (2) tractors/loaders/backhoes, one (1) grader, and one (1) water truck. It was assumed that all equipment would run 8 hours a day which represents a conservative analysis.

Upgrades to Existing WWTPs

To evaluate emissions associated with upgrades to existing WWTPs it was assumed that each site would be graded and prepared over approximately 1 month. It was assumed that equipment used would include the following: one (1) grader, one (1) rubber tired dozer, one (1) tractor/loader/ backhoe, and one (1) water truck. To be conservative, it was assumed that all equipment would operate for 8 hours per day. It was assumed that no modifications would be made to the LGVSD WWTP under the No Action Alternative.

APPENDIX 3.8
Air Quality

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to air quality and the proposed project.

LGVSD

City of San Rafael General Plan

The Air and Water Quality Elements of the City of San Rafael 2020 General Plan include policies to help San Rafael meet all ambient air quality standards. Policies that may be applicable to the proposed action include the following (City of San Rafael, 2004):

> *Policy AW-2. Land Use Compatibility*: To ensure excellent air quality, promote land use compatibility for new development by using buffering techniques such as landscaping, setbacks, and screening in areas where different land uses abut one another.
>
> *Policy AW-2b. Buffers*: Through development review, ensure that any new sources of toxic air contaminants or odors provide adequate buffers to protect sensitive receptors and comply with existing health standards.
>
> *Policy AW-4. Particulate Matter Pollution Reduction*: Promote reduction of particulate matter from roads, parking lots, construction sites, agricultural lands and other activities.
>
> *Policy AQ-4a. Pollution Reduction*: Through development review, ensure that any proposed new sources of particulate matter use latest control technology (such as enclosures, paving unpaved areas, parking lot sweeping and landscaping) and provide adequate buffer setbacks to protect existing or future sensitive receptors.

Marin Countywide Plan

Policies regarding air quality are contained within the Natural Systems and Agricultural Element of the Marin Countywide Plan. Policies and implementation programs that may be applicable to the proposed action include the following (Marin County, 2007):

> *Policy AIR-1.3. Require Mitigation of Air Quality Impacts*: Require projects that generate potentially significant levels of air pollutants, such as quarry, landfill operations, or large construction projects, to incorporate best available air quality mitigation in the project design.

Policy AIR-2.1. Buffer Emission Sources and Sensitive Land Uses: Consider potential air pollution and odor impacts from land uses that may emit pollution and/or odors when locating (a) air pollution sources, and (b) residential and other pollution-sensitive land uses in the vicinity of air pollution sources (which may include freeways, manufacturing, extraction, hazardous material storage, landfill, food processing, wastewater treatment, and other similar uses).

Implementation program AIR-4h. Evaluate the Carbon Emissions Impacts of Proposed Developments: Incorporate a carbon emissions assessment into land use plans and the environmental impact report for proposed projects.

Novato SD

City of Novato General Plan

The Environment Chapter of the City of Novato General Plan includes policies to regulate emissions of air pollutants. Programs included in the City of Novato General Plan that may be applicable to the proposed action include the following (City of Novato, 1996):

EN Program 32.1: Use the environmental review process to determine whether air emissions from proposed development would exceed BAAQMD standards.

EN Program 34.1: Use the City's development review process and CEQA regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

EN Program 34.3: Continue to require and enforce a dust emissions control plan for construction.

EN Program 34.4: Review all new industrial development for potential air quality impacts on sensitive receptors. Require adequate buffer zones between industrial development and sensitive receptors to ensure public health and to prevent odor-based nuisance.

Marin Countywide Plan

See discussion under LGVSD service area.

SVCSD

City of Sonoma General Plan

The Environmental Resources Element of the City of Sonoma's 2020 General Plan includes the following policy and implementation measure that may be applicable to the proposed action (City of Sonoma, 2006):

Policy 2.0: Require development to avoid potential impacts to wildlife habitat, air quality, and other significant biological resources, or to adequately mitigate such impacts if avoidance is not feasible.

Implementation Measure 2.9.1: Evaluate applications for new developments in terms of their potential to expose sensitive uses to substantial air pollutant concentrations and/or to create or emit objectionable odors.

Sonoma County General Plan

The Sonoma County General Plan's Resource Conservation Element includes goals and policies regarding the protection and enhancement of air quality in the region. The county's goal in maintaining air quality is to "Preserve and maintain good air quality and provide for an air quality standard that will protect human health and preclude crop, plant, and property damage in accordance with the requirement of the federal and state Clean Air Acts" (Sonoma County, 1998). The General Plan Resource Conservation Element contains the following objective that would generally be applicable to the proposed action:

> *Objective RC-13.1*: Maintain the projected county air quality as set forth in the Final Environmental Impact Report [for the General Plan EIR] and minimize air pollution.

Napa SD

City of Napa General Plan

The City of Napa General Plan's Natural Resources chapter contains a number of policies to help maintain acceptable levels of air quality in the City of Napa. The following policy may be applicable to the proposed action (City of Napa, 2007):

> *Policy NR-5.4*: The City shall, during discretionary review, require that development proposals comply with federal and state air quality standards, or make findings that the project has overriding benefits to the community that outweigh nonattainment of the standards.

Napa County

The Conservation and Open Space Element of the Napa County General Plan contains plans and policies to protect and enhance air quality in the County. The policies outlined in this document focus primarily on discouraging scattered development and preventing the filling of river areas, salt ponds, wetlands and marsh areas (Napa County, 1998).

APPENDIX 3.8A
Construction Assumption

URBEMIS Construction Assumptions – No Action Alternative

Due to the lack of data on exact construction phasing of the No Action Alternative, a number of assumptions were made to determine worst case annual construction emission associated with construction. These assumptions are outlined below.

Construction of Pipelines

To estimate worst case emission from pipeline construction throughout the project area, it was assumed that each sanitary district would construct pipeline projects concurrently. It was assumed that construction of each pipeline would progress at a rate of 250 feet per day and that work would be completed in 'spreads'. The first spread of equipment would demolish the existing roadway and remove the excavated material. The second spread would excavate the trench required to install the proposed pipeline. The third spread would install the proposed pipeline and the final spread would backfill the trench and re-pave the disturbed portion of the road. It was assumed that work would be completed along a line so each spread would be used each day at different locations along the pipeline. Equipment estimates for each spread are demonstrated in Table 1 below. It was assumed that each piece of equipment would operate 8 hours per day which represents a conservative analysis.

TABLE 1
CONSTRUCTION EQUIPMENT ESTIMATES

Equipment	Demolish Roadway	Excavate Trench	Install Pipe	Re-pave Roadway
Air Compressors			1	
Concrete/Industrial Saw	2			
Cranes			1	
Excavators		1		
Forklifts			2	
Graders		1		
Pavers				1
Paving Equipment				2
Plate Compactors				1
Rollers				2
Rubber Tired Dozers		1		
Tractors/Loaders/Backhoes	2	2	1	1
Water Trucks		1		
Welders			3	
Haul Trucks	1	28		

It is important to note that the equipment counts demonstrated in Table 1 represent the set of equipment used to construct one pipeline. Therefore the total pieces of equipment being utilized in the district the on the worst-case day would be three times the amount of equipment presented in Table 1 (assuming that no new pipeline would be constructed in connection with the LGVSD under the No Action Alternative).

To estimate the amount of material to be exported during demolition of the roadway it was assumed that the asphalt is 1 foot thick. Assuming that a 5 foot wide strip of asphalt is removed, a total of 1250 cubic feet of material would be removed per day (250 feet long x 5 feet wide x 1 foot deep = 1250 cubic feet).

To estimate the amount of dirt handled during trench excavation it was assumed that the trench would be 6 feet deep by 5 feet wide resulting approximately 7500 cubic feet or roughly 280 cubic yards of excavation each day. It was assumed that all excavated material would be exported and that new soil would be imported to fill the trench. It was assumed that 270 cubic yards of fill would be needed for each 250 foot segment since the pipe will take up a small volume of the trench.

The number of construction work days for the worst case year was determined by dividing the proposed pipe length associated with each WWTP by the estimated number of feet to be completed per day (250 feet). Therefore it was assumed that Novato SD pipeline construction would take approximately 92 days, SVCSD pipeline construction would take approximately 131 days and Napa SD construction would take approximately 74 days.

Construction of New Storage Facilities

It was assumed that excavation of new storage ponds would occur at a rate of approximately 550 cubic yards of material exported per day. Therefore, the excavation of the new 1.5 acre-foot storage facility in the Novato SD would take approximately 5 days each assuming that approximately 2,000 cubic yards of soil is excavated to create a 1.5 acre-foot storage pond. The storage ponds at SVCSD would provide 65 acre-feet of new storage, and would require removal of approximately 100,000 cubic yards of material. At a rate of 550 cubic yards per day this would take approximately 181 work days.

The construction equipment mix assumed to be used for excavation of the proposed storage ponds includes the following: two (2) rubber tired dozers, two (2) tractors/loaders/backhoes, one (1) grader, and one (1) water truck. It was assumed that all equipment would run 8 hours a day which represents a conservative analysis.

Upgrades to Existing WWTPs

To evaluate emissions associated with upgrades to existing WWTPs it was assumed that each site would be graded and prepared over approximately 1 month. It was assumed that equipment used would include the following: one (1) grader, one (1) rubber tired dozer, one (1) tractor/loader/backhoe, and one (1) water truck. To be conservative, it was assumed that all equipment would operate for 8 hours per day. It was assumed that no modifications would be made to the LGVSD WWTP under the No Action Alternative.

URBEMIS Construction Assumptions – Phase 1

Assumptions used to estimate construction emissions from Phase 1 were similar to those used to evaluate emissions from construction of the No Action Alternative. However, for Phase 1 it was assumed that construction of facilities in the LGVSD would require an additional spread (resulting in four spreads working concurrently during the worst case year).

Additionally, since a greater number of new facilities would be constructed under Phase 1, it was assumed that during the worst case year pipeline construction in SVCSD and Napa would take place throughout the entire year. For LGVSD and Novato, pipeline construction would take place for approximately six months and ten months respectively during the worst case year. The analysis presented in the Air Quality Section assumes that all of these activities would occur concurrently in the same year, a worst case scenario.

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1NovatoSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	0.83	6.09	3.68	0.00	3.58	0.38	3.96	0.75	0.35	1.10	613.66

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	0.83	6.09	3.68	0.00	3.58	0.38	3.96	0.75	0.35	1.10	613.66
Asphalt 01/01/2009-05/08/2009	0.21	1.22	0.75	0.00	0.00	0.10	0.11	0.00	0.10	0.10	97.87
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.20	1.20	0.65	0.00	0.00	0.10	0.10	0.00	0.10	0.10	87.88
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.79
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.20

Building 01/01/2009-05/08/2009	0.20	1.21	1.02	0.00	0.00	0.08	0.08	0.00	0.07	0.07	151.80
Building Off Road Diesel	0.17	0.94	0.54	0.00	0.00	0.07	0.07	0.00	0.06	0.06	84.98
Building Vendor Trips	0.02	0.24	0.16	0.00	0.00	0.01	0.01	0.00	0.01	0.01	41.11
Building Worker Trips	0.01	0.02	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.72
Demolition 01/01/2009-05/08/2009	0.07	0.42	0.30	0.00	0.02	0.04	0.06	0.01	0.03	0.04	42.94
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.06	0.39	0.23	0.00	0.00	0.03	0.03	0.00	0.03	0.03	35.04
Demo On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.22
Demo Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.69
Fine Grading 01/01/2009-01/07/2009	0.02	0.17	0.09	0.00	0.18	0.01	0.19	0.04	0.01	0.05	16.25
Fine Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.84
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Mass Grading 01/01/2009-05/08/2009	0.30	2.75	1.35	0.00	3.22	0.14	3.36	0.67	0.13	0.80	276.16
Mass Grading Dust	0.00	0.00	0.00	0.00	3.22	0.00	3.22	0.67	0.00	0.67	0.00
Mass Grading Off Road Diesel	0.25	1.95	1.01	0.00	0.00	0.11	0.11	0.00	0.10	0.10	167.28
Mass Grading On Road Diesel	0.05	0.79	0.25	0.00	0.00	0.03	0.03	0.00	0.03	0.03	101.86
Mass Grading Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.03

Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.15	0.02	0.17	0.03	0.02	0.05	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.03	0.00	0.03	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 5/8/2009 - Road Removal

Building Volume Total (cubic feet): 1250

Building Volume Daily (cubic feet): 1250

On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 1/1/2009 - 1/7/2009 - Excavation of a new storage facility

Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 5/8/2009 - Pipeline Trench Excavation

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Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 550

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 5/8/2009 - Repaving and site finishing

Acres to be Paved: 3

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 5/8/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1SVCSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.82	14.73	8.42	0.00	11.61	0.83	12.44	2.43	0.76	3.19	1,477.51

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.82	14.73	8.42	0.00	11.61	0.83	12.44	2.43	0.76	3.19	1,477.51
Asphalt 01/01/2009-07/02/2009	0.30	1.73	1.07	0.00	0.00	0.15	0.15	0.00	0.14	0.14	139.19
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.29	1.71	0.92	0.00	0.00	0.15	0.15	0.00	0.14	0.14	125.13
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39
Paving Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67

Building 01/01/2009-07/02/2009	0.29	1.84	1.67	0.00	0.01	0.11	0.12	0.00	0.10	0.10	247.87
Building Off Road Diesel	0.24	1.34	0.77	0.00	0.00	0.09	0.09	0.00	0.09	0.09	121.00
Building Vendor Trips	0.03	0.47	0.30	0.00	0.00	0.02	0.02	0.00	0.02	0.02	78.05
Building Worker Trips	0.02	0.03	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.82
Demolition 01/01/2009-07/02/2009	0.10	0.60	0.43	0.00	0.03	0.05	0.09	0.01	0.05	0.05	61.14
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.09	0.56	0.33	0.00	0.00	0.05	0.05	0.00	0.05	0.05	49.89
Demo On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.58
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67
Fine Grading 01/01/2009-09/10/2009	0.67	6.31	3.15	0.00	6.79	0.30	7.09	1.42	0.28	1.69	607.44
Fine Grading Dust	0.00	0.00	0.00	0.00	6.78	0.00	6.78	1.42	0.00	1.42	0.00
Fine Grading Off Road Diesel	0.58	4.74	2.49	0.00	0.00	0.24	0.24	0.00	0.22	0.22	392.31
Fine Grading On Road Diesel	0.09	1.56	0.49	0.00	0.01	0.06	0.06	0.00	0.05	0.06	201.30
Fine Grading Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.83
Mass Grading 01/01/2009-07/02/2009	0.42	3.91	1.92	0.00	4.58	0.20	4.78	0.96	0.18	1.14	393.23
Mass Grading Dust	0.00	0.00	0.00	0.00	4.58	0.00	4.58	0.96	0.00	0.96	0.00
Mass Grading Off Road Diesel	0.35	2.78	1.44	0.00	0.00	0.15	0.15	0.00	0.14	0.14	238.19
Mass Grading On Road Diesel	0.07	1.13	0.35	0.00	0.01	0.04	0.05	0.00	0.04	0.04	145.04
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.01

Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.20	0.02	0.22	0.04	0.02	0.06	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 7/2/2009 - Road Removal

Building Volume Total (cubic feet): 1250

Building Volume Daily (cubic feet): 1250

On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 1/1/2009 - 9/10/2009 - Excavation of new storage facilities

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 552.49

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 7/2/2009 - Pipeline Trench Excavation

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Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 550

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 7/2/2009 - Repaving and site finishing

Acres to be Paved: 4

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 7/2/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

URBEMIS - NO ACTION CONSTRUCTION EMISSIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1NapaSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	0.67	4.90	3.05	0.00	2.81	0.30	3.12	0.59	0.28	0.87	504.99

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	0.67	4.90	3.05	0.00	2.81	0.30	3.12	0.59	0.28	0.87	504.99
Asphalt 01/01/2009-04/14/2009	0.17	0.99	0.61	0.00	0.00	0.08	0.09	0.00	0.08	0.08	79.67
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.16	0.96	0.52	0.00	0.00	0.08	0.08	0.00	0.08	0.08	70.68
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39
Paving Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.60

Building 01/01/2009-04/14/2009	0.17	1.04	0.95	0.00	0.00	0.06	0.07	0.00	0.06	0.06	140.02
Building Off Road Diesel	0.14	0.76	0.44	0.00	0.00	0.05	0.05	0.00	0.05	0.05	68.35
Building Vendor Trips	0.02	0.26	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.09
Building Worker Trips	0.01	0.02	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.58
Demolition 01/01/2009-04/14/2009	0.05	0.34	0.24	0.00	0.02	0.03	0.05	0.00	0.03	0.03	34.54
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.05	0.32	0.19	0.00	0.00	0.03	0.03	0.00	0.03	0.03	28.18
Demo On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59
Demo Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.77
Mass Grading 01/01/2009-04/14/2009	0.24	2.21	1.08	0.00	2.59	0.11	2.70	0.54	0.10	0.64	222.13
Mass Grading Dust	0.00	0.00	0.00	0.00	2.59	0.00	2.59	0.54	0.00	0.54	0.00
Mass Grading Off Road Diesel	0.20	1.57	0.81	0.00	0.00	0.09	0.09	0.00	0.08	0.08	134.55
Mass Grading On Road Diesel	0.04	0.64	0.20	0.00	0.00	0.02	0.03	0.00	0.02	0.02	81.93
Mass Grading Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.65
Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.20	0.02	0.22	0.04	0.02	0.06	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/14/2009 - Road Removal

Building Volume Total (cubic feet): 1250

Building Volume Daily (cubic feet): 1250

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On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 4/14/2009 - Pipeline Trench Excavation

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 550

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 4/14/2009 - Repaving and site finishing

Acres to be Paved: 4

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 4/14/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

URBEMIS - PHASE 1 CONSTRUCTION EMISSIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1LGVSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.10	8.09	4.76	0.00	4.76	0.51	5.26	0.99	0.47	1.46	798.31

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.10	8.09	4.76	0.00	4.76	0.51	5.26	0.99	0.47	1.46	798.31
Asphalt 01/01/2009-06/26/2009	0.28	1.67	1.04	0.00	0.00	0.14	0.15	0.00	0.13	0.13	133.82
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.28	1.65	0.89	0.00	0.00	0.14	0.14	0.00	0.13	0.13	121.31
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Paving Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.32

Building 01/01/2009-06/26/2009	0.26	1.54	1.19	0.00	0.00	0.10	0.10	0.00	0.09	0.09	178.80
Building Off Road Diesel	0.23	1.30	0.75	0.00	0.00	0.09	0.09	0.00	0.08	0.08	117.30
Building Vendor Trips	0.02	0.23	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.83
Building Worker Trips	0.01	0.02	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.67
Demolition 01/01/2009-06/26/2009	0.09	0.58	0.41	0.00	0.03	0.05	0.08	0.01	0.05	0.05	59.28
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.09	0.54	0.32	0.00	0.00	0.05	0.05	0.00	0.04	0.04	48.37
Demo On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47
Fine Grading 01/01/2009-01/07/2009	0.02	0.17	0.09	0.00	0.17	0.01	0.18	0.04	0.01	0.04	16.25
Fine Grading Dust	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.84
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Mass Grading 01/01/2009-06/26/2009	0.41	3.80	1.86	0.00	4.44	0.19	4.63	0.93	0.17	1.10	381.53
Mass Grading Dust	0.00	0.00	0.00	0.00	4.44	0.00	4.44	0.93	0.00	0.93	0.00
Mass Grading Off Road Diesel	0.34	2.70	1.40	0.00	0.00	0.15	0.15	0.00	0.14	0.14	230.91
Mass Grading On Road Diesel	0.07	1.09	0.34	0.00	0.00	0.04	0.05	0.00	0.04	0.04	140.91
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.70

Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.10	0.02	0.12	0.02	0.02	0.04	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 6/26/2009 - Road Removal

Building Volume Total (cubic feet): 157464

Building Volume Daily (cubic feet): 1250

On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 1/1/2009 - 1/7/2009 - Excavation of 1.5 AF storage facility

Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 6/26/2009 - Pipeline Trench Excavation

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Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 551.18

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - site preparation for upgrades

Total Acres Disturbed: 2

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 6/26/2009 - Repaving and site finishing

Acres to be Paved: 2

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 6/26/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

URBEMIS - PHASE 1 CONSTRUCTION EMISSIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1NovatoSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.81	13.31	8.09	0.00	7.78	0.83	8.61	1.63	0.77	2.39	1,346.93

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.81	13.31	8.09	0.00	7.78	0.83	8.61	1.63	0.77	2.39	1,346.93
Asphalt 01/01/2009-10/22/2009	0.47	2.78	1.72	0.00	0.00	0.24	0.24	0.00	0.22	0.22	222.14
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.46	2.75	1.48	0.00	0.00	0.24	0.24	0.00	0.22	0.22	201.55
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.79
Paving Worker Trips	0.01	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.80

Building 01/01/2009-10/22/2009	0.45	2.76	2.33	0.00	0.01	0.17	0.18	0.00	0.16	0.16	348.15
Building Off Road Diesel	0.39	2.16	1.24	0.00	0.00	0.15	0.15	0.00	0.14	0.14	194.89
Building Vendor Trips	0.04	0.56	0.36	0.00	0.00	0.02	0.02	0.00	0.02	0.02	94.28
Building Worker Trips	0.02	0.04	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.98
Demolition 01/01/2009-10/22/2009	0.15	0.96	0.68	0.00	0.06	0.08	0.14	0.01	0.08	0.09	98.48
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.15	0.90	0.53	0.00	0.00	0.08	0.08	0.00	0.07	0.07	80.36
Demo On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37
Demo Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.75
Fine Grading 01/01/2009-01/07/2009	0.02	0.17	0.09	0.00	0.18	0.01	0.19	0.04	0.01	0.05	16.25
Fine Grading Dust	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.02	0.13	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.84
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.03
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Mass Grading 01/01/2009-10/22/2009	0.68	6.30	3.09	0.00	7.38	0.32	7.70	1.54	0.29	1.83	633.27
Mass Grading Dust	0.00	0.00	0.00	0.00	7.37	0.00	7.37	1.54	0.00	1.54	0.00
Mass Grading Off Road Diesel	0.56	4.48	2.32	0.00	0.00	0.25	0.25	0.00	0.23	0.23	383.64
Mass Grading On Road Diesel	0.11	1.81	0.57	0.00	0.01	0.07	0.08	0.00	0.06	0.06	233.51
Mass Grading Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.12

Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.15	0.02	0.17	0.03	0.02	0.05	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.15	0.00	0.15	0.03	0.00	0.03	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 10/22/2009 - Road Removal

Building Volume Total (cubic feet): 265302

Building Volume Daily (cubic feet): 1250

On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 1/1/2009 - 1/7/2009 - Excavation of a new storage facility

Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 10/22/2009 - Pipeline Trench Excavation

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Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 549.76

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 3

Maximum Daily Acreage Disturbed: 0.75

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 10/22/2009 - Repaving and site finishing

Acres to be Paved: 3

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 10/22/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

URBEMIS - PHASE 1 CONSTRUCTION EMISSIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1SVCSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	3.20	25.31	14.79	0.01	19.20	1.45	20.65	4.01	1.34	5.35	2,550.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	3.20	25.31	14.79	0.01	19.20	1.45	20.65	4.01	1.34	5.35	2,550.96
Asphalt 01/01/2009-12/31/2009	0.58	3.43	2.13	0.00	0.00	0.30	0.30	0.00	0.27	0.27	274.96
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.57	3.40	1.84	0.00	0.00	0.30	0.30	0.00	0.27	0.27	249.31
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39
Paving Worker Trips	0.01	0.02	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.26

Building 01/01/2009-12/31/2009	0.58	3.67	3.33	0.00	0.01	0.22	0.23	0.00	0.20	0.21	493.84
Building Off Road Diesel	0.48	2.67	1.54	0.00	0.00	0.19	0.19	0.00	0.17	0.17	241.07
Building Vendor Trips	0.06	0.93	0.60	0.00	0.01	0.03	0.04	0.00	0.03	0.03	155.50
Building Worker Trips	0.04	0.07	1.20	0.00	0.00	0.00	0.01	0.00	0.00	0.00	97.27
Demolition 01/01/2009-12/31/2009	0.19	1.19	0.85	0.00	0.07	0.10	0.17	0.01	0.09	0.11	121.82
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.18	1.11	0.66	0.00	0.00	0.10	0.10	0.00	0.09	0.09	99.41
Demo On Road Diesel	0.00	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.12
Demo Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.29
Fine Grading 01/01/2009-12/31/2009	0.96	8.89	4.48	0.00	9.78	0.43	10.21	2.04	0.39	2.44	848.34
Fine Grading Dust	0.00	0.00	0.00	0.00	9.77	0.00	9.77	2.04	0.00	2.04	0.00
Fine Grading Off Road Diesel	0.83	6.84	3.59	0.00	0.00	0.35	0.35	0.00	0.32	0.32	565.71
Fine Grading On Road Diesel	0.12	2.04	0.64	0.00	0.01	0.08	0.08	0.00	0.07	0.07	262.70
Fine Grading Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.94
Mass Grading 01/01/2009-12/31/2009	0.84	7.80	3.82	0.00	9.13	0.39	9.52	1.91	0.36	2.27	783.36
Mass Grading Dust	0.00	0.00	0.00	0.00	9.12	0.00	9.12	1.91	0.00	1.91	0.00
Mass Grading Off Road Diesel	0.70	5.54	2.87	0.00	0.00	0.31	0.31	0.00	0.28	0.28	474.55
Mass Grading On Road Diesel	0.13	2.24	0.71	0.00	0.01	0.08	0.09	0.00	0.08	0.08	288.87
Mass Grading Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.94

Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.20	0.02	0.22	0.04	0.02	0.06	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 12/31/2009 - Road Removal

Building Volume Total (cubic feet): 325542.7

Building Volume Daily (cubic feet): 1250

On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 1/1/2009 - 12/31/2009 - Excavation of new storage facilities

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 500

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 12/31/2009 - Pipeline Trench Excavation

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Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 549.81

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2009 - 12/31/2009 - Repaving and site finishing

Acres to be Paved: 4

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 12/31/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

URBEMIS - PHASE 1 CONSTRUCTION EMISSIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\206xxx\D206088.00 - North San Pablo Bay\0 D206088.01 Phase II\04 Work Products\04.1 Working Documents\EIR-EIS\Air Quality\URBEMIS\Phase1NapaSD.urb924

Project Name: North San Pablo Recycled Water

Project Location: Bay Area Air District

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	2.24	16.42	10.31	0.01	9.41	1.03	10.44	1.97	0.95	2.91	1,702.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	2.24	16.42	10.31	0.01	9.41	1.03	10.44	1.97	0.95	2.91	1,702.61
Asphalt 01/01/2009-12/31/2009	0.58	3.43	2.13	0.00	0.00	0.30	0.30	0.00	0.27	0.27	274.96
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.57	3.40	1.84	0.00	0.00	0.30	0.30	0.00	0.27	0.27	249.31
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.39
Paving Worker Trips	0.01	0.02	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.26

Building 01/01/2009-12/31/2009	0.58	3.67	3.33	0.00	0.01	0.22	0.23	0.00	0.20	0.21	493.84
Building Off Road Diesel	0.48	2.67	1.54	0.00	0.00	0.19	0.19	0.00	0.17	0.17	241.07
Building Vendor Trips	0.06	0.93	0.60	0.00	0.01	0.03	0.04	0.00	0.03	0.03	155.50
Building Worker Trips	0.04	0.07	1.20	0.00	0.00	0.00	0.01	0.00	0.00	0.00	97.27
Demolition 01/01/2009-12/31/2009	0.19	1.19	0.85	0.00	0.07	0.10	0.17	0.01	0.09	0.11	121.82
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.18	1.11	0.66	0.00	0.00	0.10	0.10	0.00	0.09	0.09	99.41
Demo On Road Diesel	0.00	0.07	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.12
Demo Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.29
Mass Grading 01/01/2009-12/31/2009	0.84	7.80	3.82	0.00	9.13	0.39	9.52	1.91	0.36	2.27	783.36
Mass Grading Dust	0.00	0.00	0.00	0.00	9.12	0.00	9.12	1.91	0.00	1.91	0.00
Mass Grading Off Road Diesel	0.70	5.54	2.87	0.00	0.00	0.31	0.31	0.00	0.28	0.28	474.55
Mass Grading On Road Diesel	0.13	2.24	0.71	0.00	0.01	0.08	0.09	0.00	0.08	0.08	288.87
Mass Grading Worker Trips	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.94
Mass Grading 01/05/2009-01/30/2009	0.04	0.33	0.18	0.00	0.20	0.02	0.22	0.04	0.02	0.06	28.64
Mass Grading Dust	0.00	0.00	0.00	0.00	0.20	0.00	0.20	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.04	0.33	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.62
Mass Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02

Phase Assumptions

Phase: Demolition 1/1/2009 - 12/31/2009 - Road Removal

Building Volume Total (cubic feet): 325542.7

Building Volume Daily (cubic feet): 1250

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On Road Truck Travel (VMT): 17.36

Off-Road Equipment:

2 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Mass Grading 1/1/2009 - 12/31/2009 - Pipeline Trench Excavation

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 550 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 549.81

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/5/2009 - 1/30/2009 - Upgrades to Existing WWTP

Total Acres Disturbed: 4

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 1/1/2009 - 12/31/2009 - Repaving and site finishing

Acres to be Paved: 4

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 1/1/2009 - 12/31/2009 - Pipeline Installation

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Summary of Indirect and Direct GHG Emission from Operations

No Action Alternative					
	CO2e Emissions (metric tons/year)				
Source	LGVSD [a]	SVCSD [b]	Novato SD [c]	Napa SD [d]	All Districts
Indirect Emissions (Electricity)	0.0	76.7	31.9	6.4	115.1
Direct Emissions (Vehicles)	0.0	0.8	0.6	0.4	1.8
Total Emissions	0.0	77.5	32.5	6.9	116.9
Percentage of 25,000	0.00%	0.31%	0.13%	0.03%	0.47%
[a] Assumes weekly round trip inspection of 0 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[b] Assumes weekly round trip inspection of 6.2 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[c] Assumes weekly round trip inspection of 4.4 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[d] Assumes weekly round trip inspection of 3.5 miles of new pipeline and an emission rate of 2.7 lb/mile.					

Phase 1					
	CO2e Emissions (metric tons/year)				
Source	LGVSD [a]	SVCSD [b]	Novato SD [c]	Napa SD [d]	All Districts
Indirect Emissions (Electricity)	9.3	112.5	33.1	356.7	511.5
Direct Emissions (Vehicles)	0.8	1.7	1.3	2.2	5.9
Total Emissions	10.0	114.1	34.4	358.9	517.4
Percentage of 25,000	0.04%	0.46%	0.14%	1.44%	2.07%
[a] Assumes weekly round trip inspection of 5.9 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[b] Assumes weekly round trip inspection of 13.2 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[c] Assumes weekly round trip inspection of 9.9 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[d] Assumes weekly round trip inspection of 17.5 miles of new pipeline and an emission rate of 2.7 lb/mile.					

Alternative 1					
	CO2e Emissions (metric tons/year)				
Source	LGVSD [a]	SVCSD [b]	Novato SD [c]	Napa SD [d]	All Districts
Indirect Emissions (Electricity)	9.3	169.9	33.1	370.5	582.8
Direct Emissions (Vehicles)	0.8	4.3	1.6	4.0	10.6
Total Emissions	10.0	174.2	34.7	374.4	593.3
Percentage of 25,000	0.04%	0.70%	0.14%	1.50%	2.37%
[a] Assumes weekly round trip inspection of 5.9 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[b] Assumes weekly round trip inspection of 33.7 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[c] Assumes weekly round trip inspection of 12.4 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[d] Assumes weekly round trip inspection of 31.1 miles of new pipeline and an emission rate of 2.7 lb/mile.					

Alternative 2					
	CO2e Emissions (metric tons/year)				
Source	LGVSD [a]	SVCSD [b]	Novato SD [c]	Napa SD [d]	All Districts
Indirect Emissions (Electricity)	43.1	260.6	74.6	407.2	785.5
Direct Emissions (Vehicles)	2.3	5.3	4.6	5.6	17.8
Total Emissions	45.4	266.0	79.2	412.8	803.3
Percentage of 25,000	0.18%	1.06%	0.32%	1.65%	3.21%
[a] Assumes weekly round trip inspection of 17.9 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[b] Assumes weekly round trip inspection of 42 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[c] Assumes weekly round trip inspection of 36 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[d] Assumes weekly round trip inspection of 44.1 miles of new pipeline and an emission rate of 2.7 lb/mile.					

Alternative 3					
	CO2e Emissions (metric tons/year)				
Source	LGVSD [a]	SVCSD [b]	Novato SD [c]	Napa SD [d]	All Districts
Indirect Emissions (Electricity)	57.4	372.1	123.4	407.2	960.1
Direct Emissions (Vehicles)	2.3	5.6	6.0	5.6	19.5
Total Emissions	59.7	377.8	129.4	412.8	979.7
Percentage of 25,000	0.24%	1.51%	0.52%	1.65%	3.92%
[a] Assumes weekly round trip inspection of 17.9 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[b] Assumes weekly round trip inspection of 44.2 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[c] Assumes weekly round trip inspection of 47.1 miles of new pipeline and an emission rate of 2.7 lb/mile.					
[d] Assumes weekly round trip inspection of 44.1 miles of new pipeline and an emission rate of 2.7 lb/mile.					

Greenhouse Gas (GHG) Emissions Calculations - No Action Alternative

Project Name: North San Pablo Recycled Water Project
ESA Proj. Number: D206088.01

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

LGVSD

Estimated Project Annual Electrical Use: 0 kWh (kilowatt hours)/year
0 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	0	0	1	0
Nitrous Oxide (N2O)	0.0037	0	0.0	296	0
Methane (CH4)	0.0067	0	0.0	23	0
Total Indirect GHG Emissions from LGVSD Electricity Use=					**0**

Novato SD

Estimated Project Annual Electrical Use: 134,000 kWh (kilowatt hours)/year
134 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	134	32	1	32
Nitrous Oxide (N2O)	0.0037	134	0.0	296	0
Methane (CH4)	0.0067	134	0.0	23	0
Total Indirect GHG Emissions from Novato Electricity Use=					**32**

SVCSD

Estimated Project Annual Electrical Use: 322,000 kWh (kilowatt hours)/year
322 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	322	77	1	77
Nitrous Oxide (N2O)	0.0037	322	0.0	296	0
Methane (CH4)	0.0067	322	0.0	23	0
Total Indirect GHG Emissions from SVCSD Electricity Use=					**77**

Napa SD

Estimated Project Annual Electrical Use: 27,000 kWh (kilowatt hours)/year
27 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	27	6	1	6
Nitrous Oxide (N2O)	0.0037	27	0.0	296	0
Methane (CH4)	0.0067	27	0.0	23	0
Total Indirect GHG Emissions from Napa SD Electricity Use=					**6**

Total Indirect Emissions From Electricity Use (No Action)	
Service Area	**Annual CO2 Equivalent Emissions (metric tons)**
LGVSD	0
Novato SD	32
SVCSD	77
Napa SD	6
Total Indirect Emissions From Electricity Use (No Action) =	**115**

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol, April 2008 update

Pg. 33 (CCARRP) gives Equations

Pg. 90 (CCARRP) gives CO2 equivalency factors

Pg. 92 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

Carbon Dioxide Emission Factor from PG&E Carbon Footprint Calculator (http://www.pge.com/myhome/environment/calculator/)

lbs/metric ton = 2204.62

Percentage of 25,000 0.5%
Percentage of 174 Million 0.000%

Greenhouse Gas (GHG) Emissions Calculations - Phase 1

Project Name: North San Pablo Recycled Water Project
ESA Proj. Number: D206088.01

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

LGVSD

Estimated Project Annual Electrical Use: 39,000 kWh (kilowatt hours)/year
39 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	39	9	1	9
Nitrous Oxide (N2O)	0.0037	39	0.0	296	0
Methane (CH4)	0.0067	39	0.0	23	0
Total Indirect GHG Emissions from LGVSD Electricity Use=					**9**

Novato SD

Estimated Project Annual Electrical Use: 139,000 kWh (kilowatt hours)/year
139 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	139	33	1	33
Nitrous Oxide (N2O)	0.0037	139	0.0	296	0
Methane (CH4)	0.0067	139	0.0	23	0
Total Indirect GHG Emissions from Novato Electricity Use=					**33**

SVCSD

Estimated Project Annual Electrical Use: 472,000 kWh (kilowatt hours)/year
472 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	472	112	1	112
Nitrous Oxide (N2O)	0.0037	472	0.0	296	0
Methane (CH4)	0.0067	472	0.0	23	0
Total Indirect GHG Emissions from SVCSD Electricity Use=					**112**

Napa SD

Estimated Project Annual Electrical Use: 1,497,000 kWh (kilowatt hours)/year
1,497 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,497	356	1	356
Nitrous Oxide (N2O)	0.0037	1,497	0.0	296	1
Methane (CH4)	0.0067	1,497	0.0	23	0
Total Indirect GHG Emissions from Napa SD Electricity Use=					**357**

Total Indirect Emissions From Electricity Use (Phase 1)	
Service Area	**Annual CO2 Equivalent Emissions (metric tons)**
LGVSD	9
Novato SD	33
SVCSD	112
Napa SD	357
Total Indirect Emissions From Electricity Use (Phase 1) =	**512**

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol, April 2008 update

Pg. 33 (CCARRP) gives Equations

Pg. 90 (CCARRP) gives CO2 equivalency factors

Pg. 92 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

Carbon Dioxide Emission Factor from PG&E Carbon Footprint Calculator (http://www.pge.com/myhome/environment/calculator/)

lbs/metric ton = 2204.62

Percentage of 25,000 2.0%
Percentage of 174 Million 0.000%

Greenhouse Gas (GHG) Emissions Calculations - Alternative 1

Project Name: North San Pablo Recycled Water Project
ESA Proj. Number: D206088.01

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

LGVSD

Estimated Project Annual Electrical Use: 39,000 kWh (kilowatt hours)/year
39 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	39	9	1	9
Nitrous Oxide (N2O)	0.0037	39	0.0	296	0
Methane (CH4)	0.0067	39	0.0	23	0
Total Indirect GHG Emissions from LGVSD Electricity Use=					**9**

Novato SD

Estimated Project Annual Electrical Use: 139,000 kWh (kilowatt hours)/year
139 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	139	33	1	33
Nitrous Oxide (N2O)	0.0037	139	0.0	296	0
Methane (CH4)	0.0067	139	0.0	23	0
Total Indirect GHG Emissions from Novato Electricity Use=					**33**

SVCSD

Estimated Project Annual Electrical Use: 713,000 kWh (kilowatt hours)/year
713 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	713	169	1	169
Nitrous Oxide (N2O)	0.0037	713	0.0	296	0
Methane (CH4)	0.0067	713	0.0	23	0
Total Indirect GHG Emissions from SVCSD Electricity Use=					**170**

Napa SD

Estimated Project Annual Electrical Use: 1,555,000 kWh (kilowatt hours)/year
1,555 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,555	370	1	370
Nitrous Oxide (N2O)	0.0037	1,555	0.0	296	1
Methane (CH4)	0.0067	1,555	0.0	23	0
Total Indirect GHG Emissions from Napa SD Electricity Use=					**370**

Total Indirect Emissions From Electricity Use (Alternative 1)	
Service Area	**Annual CO2 Equivalent Emissions (metric tons)**
LGVSD	9
Novato SD	33
SVCSD	170
Napa SD	370
Total Indirect Emissions From Electricity Use (Alternative 1) =	**583**

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol, April 2008 update

Pg. 33 (CCARRP) gives Equations

Pg. 90 (CCARRP) gives CO2 equivalency factors

Pg. 92 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

Carbon Dioxide Emission Factor from PG&E Carbon Footprint Calculator (http://www.pge.com/myhome/environment/calculator/)

lbs/metric ton = 2204.62

Percentage of 25,000 2.3%
Percentage of 174 Million 0.000%

Greenhouse Gas (GHG) Emissions Calculations - Alternative 2

Project Name: North San Pablo Recycled Water Project
ESA Proj. Number: D206088.01

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

LGVSD

Estimated Project Annual Electrical Use: 181,000 kWh (kilowatt hours)/year
181 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	181	43	1	43
Nitrous Oxide (N2O)	0.0037	181	0.0	296	0
Methane (CH4)	0.0067	181	0.0	23	0
Total Indirect GHG Emissions from LGVSD Electricity Use=					**43**

Novato SD

Estimated Project Annual Electrical Use: 313,000 kWh (kilowatt hours)/year
313 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	313	74	1	74
Nitrous Oxide (N2O)	0.0037	313	0.0	296	0
Methane (CH4)	0.0067	313	0.0	23	0
Total Indirect GHG Emissions from Novato Electricity Use=					**75**

SVCSD

Estimated Project Annual Electrical Use: 1,094,000 kWh (kilowatt hours)/year
1,094 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,094	260	1	260
Nitrous Oxide (N2O)	0.0037	1,094	0.0	296	1
Methane (CH4)	0.0067	1,094	0.0	23	0
Total Indirect GHG Emissions from SVCSD Electricity Use=					**261**

Napa SD

Estimated Project Annual Electrical Use: 1,709,000 kWh (kilowatt hours)/year
1,709 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,709	406	1	406
Nitrous Oxide (N2O)	0.0037	1,709	0.0	296	1
Methane (CH4)	0.0067	1,709	0.0	23	0
Total Indirect GHG Emissions from Napa SD Electricity Use=					**407**

Total Indirect Emissions From Electricity Use (Alternative 2)	
Service Area	**Annual CO2 Equivalent Emissions (metric tons)**
LGVSD	43
Novato SD	75
SVCSD	261
Napa SD	407
Total Indirect Emissions From Electricity Use (Alternative 2) =	**786**

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol, April 2008 update

Pg. 33 (CCARRP) gives Equations

Pg. 90 (CCARRP) gives CO2 equivalency factors

Pg. 92 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

Carbon Dioxide Emission Factor from PG&E Carbon Footprint Calculator (http://www.pge.com/myhome/environment/calculator/)

lbs/metric ton = 2204.62

Percentage of 25,000 3.1%
Percentage of 174 Million 0.000%

Greenhouse Gas (GHG) Emissions Calculations - Alternative 3

Project Name: North San Pablo Recycled Water Project
ESA Proj. Number: D206088.01

Indirect Greenhouse Gas (GHG) Emissions from Project use of Electricity (Power Plant Emissions)

LGVSD

Estimated Project Annual Electrical Use: 241,000 kWh (kilowatt hours)/year
241 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	241	57	1	57
Nitrous Oxide (N2O)	0.0037	241	0.0	296	0
Methane (CH4)	0.0067	241	0.0	23	0
Total Indirect GHG Emissions from LGVSD Electricity Use=					**57**

Novato SD

Estimated Project Annual Electrical Use: 518,000 kWh (kilowatt hours)/year
518 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	518	123	1	123
Nitrous Oxide (N2O)	0.0037	518	0.0	296	0
Methane (CH4)	0.0067	518	0.0	23	0
Total Indirect GHG Emissions from Novato Electricity Use=					**123**

SVCSD

Estimated Project Annual Electrical Use: 1,562,000 kWh (kilowatt hours)/year
1,562 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,562	371	1	371
Nitrous Oxide (N2O)	0.0037	1,562	0.0	296	1
Methane (CH4)	0.0067	1,562	0.0	23	0
Total Indirect GHG Emissions from SVCSD Electricity Use=					**372**

Napa SD

Estimated Project Annual Electrical Use: 1,709,000 kWh (kilowatt hours)/year
1,709 mWh (megawatt hours)/year

Indirect GHG gases	Emission Factor lb/mWh	Annual Project Electricity mWh	Annual GHGs metric tons	CO2 Equivalent Factor	Annual CO2 Equivalent Emissions (metric tons)
Carbon Dioxide (CO2)	524	1,709	406	1	406
Nitrous Oxide (N2O)	0.0037	1,709	0.0	296	1
Methane (CH4)	0.0067	1,709	0.0	23	0
Total Indirect GHG Emissions from Napa SD Electricity Use=					**407**

Total Indirect Emissions From Electricity Use (Alternative 3)	
Service Area	**Annual CO2 Equivalent Emissions (metric tons)**
LGVSD	57
Novato SD	123
SVCSD	372
Napa SD	407
Total Indirect Emissions From Electricity Use (Alternative 3) =	**960**

Notes and References:

Total Emissions from Indirect Electricity Use
Formula and Emission Factor from The California Climate Action Registry Report Protocol, April 2008 update

Pg. 33 (CCARRP) gives Equations

Pg. 90 (CCARRP) gives CO2 equivalency factors

Pg. 92 (CCARRP) gives Methane and Nitrous Oxide electricity emission factors (lbs/mWh)
Methane - 0.0067 (lbs/mWh)
Nitrous Oxide - 0.0037 (lbs/mWh)

Carbon Dioxide Emission Factor from PG&E Carbon Footprint Calculator (http://www.pge.com/myhome/environment/calculator/)

lbs/metric ton = 2204.62

Percentage of 25,000 3.8%
Percentage of 174 Million 0.001%

APPENDIX 3.9
Noise

Federal, State, and local agencies regulate different aspects of environmental noise. Federal and State agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general principles intended to guide and influence development plans, while local noise ordinances establish standards and procedures for addressing specific noise sources and activities. The following discussions summarize the local regulatory framework in the project area.

LGVSD

City of San Rafael

The following policy included in the Noise Element of the City of San Rafael's General Plan may be applicable to the proposed project (City of San Rafael, 2004):

> *Policy N-10b. Mitigation for Construction Activity Noise*. Through environmental review, identify mitigation measures to minimize the exposure of neighboring properties to excessive noise levels from construction related activity.

The City of San Rafael's Municipal Code sets noise restrictions under Chapter 8.13, Noise. According to this ordinance, no person shall produce, suffer, or allow to be produced by any machine, animal or device, or by any other means, noise levels greater than those outlined in **Table 3.9-1**.

TABLE 3.9-1
CITY OF SAN RAFAEL NOISE LEVEL STANDARDS (EXPRESSED IN DBA)

Property Zone or Type	Daytime Limits (intermittent)	Daytime Limits (constant)	Nighttime Limits (intermittent)	Nighttime Limits (constant)
Residential	60	50	50	40
Mixed-Use	65	55	55	45
Multifamily residential (interior sound source)	40	35	35	30
Commercial	65	55	65	55
Industrial	70	60	70	60
Public Property	Most restrictive noise limit applicable to adjoining private property.			

SOURCE: City of San Rafael, 2008.

Construction equipment is except from the noise standards outline in Table 3.9-1. However, construction activities are only permitted between the hours of 7 a.m. and 6 p.m. on Monday through Friday, and between the hours of 9 a.m. and 6 p.m. on Saturdays, provided that noise levels do not exceed 90 dBA at any point outside of the property plane. Furthermore, construction activities are prohibited on Sundays and holidays. For any construction project involving the construction of one or more new buildings or residences within the city, or when required by the planning commission or city council as part of their development review for the property, the property owner or occupant shall post a sign at all entrances of the construction site upon commencement of construction for the purpose of informing all contractors and subcontractors and construction workers of the hours in which construction is permitted as defined in the City's noise ordinance (City of San Rafael, 2008).

Unincorporated Marin County

Policies and program included in the Marin Countywide Plan that may be applicable to the proposed project include the following (Marin County, 2007):

> *Policy NO-1.3. Regulate Noise Generating Activities*. Require measures to minimize noise exposure to neighboring properties, open space, and wildlife habitat from construction-related activities, yard maintenance equipment, and other noise sources, such as amplified music.
>
> *Implementing Program NO-1.i. Regulate Noise Sources*. Sections 6.70.030(5) and 6.70.040 of the Marin County Code establish allowable hours of operation for construction-related activities. As a condition of permit approval for projects generating significant construction noise impacts during the construction phase, construction management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement provisions of the plan.

Chapter 6.70 of the Marin County code limits the hours during which construction activities are permitted to between the hours of 7 a.m. and 6 p.m. on Monday through Friday and between 9 a.m. and 5 p.m. on Saturdays. Construction activities are strictly prohibited on Sundays and Holidays. The code also states that loud noise-generating construction-related equipment such as backhoes, generators, and jackhammers, can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from 8 a.m. to 5 p.m. on Monday through Friday only. Special exemptions may occur for construction projects of the city, County, State, other public agency, or other public utility (Marin County, 2008).

Novato SD

City of Novato

The Noise Element of the City of Novato General Plan identifies noise/land use compatibility guidelines for development in the City and contains policies addressing community noise issues. The General Plan has identified acceptable noise levels for residential uses with a maximum conditionally acceptable exterior noise level of 60 dBA, and an interior noise standard of 45 dBA

(City of Novato 1996). Additionally, the following General Plan objectives may apply to the proposed project (City of Novato, 1996):

> *Objective 11*: Ensure compatibility of new development with existing and future noise levels.
>
> *Objective 12*: Prevent land uses which increase the noise level above acceptable standards or require mitigation to reduce noise to acceptable levels.
>
> *Objective 13*: Reduce noise to acceptable levels where it now exceeds those standards whenever feasible and practical.

Chapter 19.22 of the City of Novato Municipal Code sets forth noise restrictions for sources located within the City. **Table 3.9-2** presents allowable exterior noise levels as set forth in the Municipal Code.

TABLE 3.9-2
CITY OF NOVATO ALLOWABLE EXTERIOR NOISE LEVELS

Type of Land Use	Allowable Exterior Levels[a]	
	Time Interval	Maximum Noise Level[b]
Residential	10 p.m. to 6 a.m.	45 dBA
	6 a.m. to 10 p.m.	60 dBA
Commercial	10 p.m. to 6 a.m.	60 dBA
	6 a.m. to 10 p.m.	70 dBA
Industrial or Manufacturing	Anytime	70 dBA

[a] Each of the noise limits specified in Table 3.9-2 shall be reduced by 5 dBA for impulse or simple tone noises. If ambient noise exceeds the resulting standard, the ambient shall be the standard.

[b] Maximum noise levels shall not be exceeded for an aggregate period of more than three minutes within one-hour time period or by more than 20 dBA at any time.

SOURCE: City of Novato, 2008.

Authorized construction activities are exempt from noise level standards set forth in Table 3.9-2; however, these activities are limited to between the hours of 7 a.m. and 6 p.m. on weekdays and between the hours of 10 a.m. and 5 p.m. on Saturdays. Construction activities are not permitted on Sundays or on official federal holidays. Authorized grading activities and equipment operations are only permitted between 7 a.m. and 6 p.m. on weekdays when city inspectors are available to monitor activities (City of Novato, 2008).

In addition to noise restrictions, the Municipal Code also states that activities shall not generate ground vibration that is perceptible without instruments by the average person at any point along or beyond the property line of the parcel containing the activities. Temporary vibration from construction, demolition, and vehicles associated with construction are exempt (City of Novato, 2008).

Unincorporated Marin County

See discussion under LGVSD Service Area.

SVCSD

City of Sonoma

The Noise Element of the City of Sonoma 2020 General Plan contains the following policies and implementation measure that may be applicable to the proposed project (City of Sonoma, 2006):

> *Policy 1.1*. Apply the following standards for maximum Ldn levels to citywide development:
>
> > *45 Ldn:* For indoor environments in all residential units.
> >
> > *60 Ldn:* For outdoor environments around all residential developments and outdoor public facilities (e.g., parks)
> >
> > *65 Ldn:* For outdoor environments around commercial and public buildings (libraries and churches).
> >
> > *70 Ldn:* For outdoor environments around industrial buildings.
>
> *Policy 1.6*. Minimize noise impacts of vehicle idling.
>
> *Implementation Measure 1.6*. Require buses and trucks parked anywhere in the city longer than five minutes to shut off their engines, except when they are actively unloading or loading passengers or goods.

City of Sonoma's Municipal Code Chapter 9.56, *Noise*, outlines noise limits applicable to sources within the City. General exterior noise level standards are outlined in **Table 3.9-3**.

TABLE 3.9-3
CITY OF SONOMA NOISE LEVEL STANDARDS (EXPRESSED IN DBA)

Property Zone or Type	Daytime Limits (intermittent)	Daytime Limits (constant)	Nighttime Limits (intermittent)	Nighttime Limits (constant)
Residential	60	50	50	40
Commercial/Mixed-Use	65	55	65	55
Public Property	Most restrictive noise limit applicable to adjoining private property.			

SOURCE: City of Sonoma, 2008.

Construction activities are exempt from the limits outlined in the table above; however, they are limited to between the hours of 8 a.m. and 6 p.m. on Monday through Friday, between 9 a.m. and 6 p.m. on Saturdays, and between 10 a.m. and 6 p.m. on Sundays and holidays. Additionally, noise levels generated by construction equipment must not exceed 90 dBA at any point outside of the property line. The Code also states that the City may require that the owner or occupant of the construction site to post the construction time restrictions at all entrances to the property to notify

all contractors and subcontractors of basic noise requirements prior to commencing construction activities (City of Sonoma, 2008).

Sonoma County

Goal NE-1 of the Sonoma County General Plan Noise Element is to "protect people from the harmful effects of exposure to excessive noise and to achieve an environment in which people and land uses may function without impairment from noise" (Sonoma County, 1998). This goal aims to protect persons from existing or future excessive levels of noise that interfere with sleep, communication, relaxation, health, or legally permitted use of property. To achieve this goal, the Noise Element contains the following policies that may be applicable to the proposed project:

> *Policy NE-1a*: Designate areas within Sonoma County as noise impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dB DNL, 60 dB CNEL, or the performance standards of Table NE-2 of the Noise Element (shown below as **Table 3.9-4)**.

TABLE 3.9-4
SONOMA COUNTY MAXIMUM ALLOWABLE EXTERIOR NOISE STANDARDS[a,b]

Category	Cumulative Duration of Noise Event in any One-Hour Period (minutes) [c]	Maximum Allowable Noise Level Standards (dBA)	
		Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
1	30 – 60	50	45
2	15 – 30	55	50
3	5 – 15	60	55
4	1 – 5	65	60
5	0 – 1	70	65

[a] In recognition of ambient noise, the ordinance allows the standards set forth in this table to be adjusted in 5 dBA increments to encompass the ambient noise level. For example, if the ambient noise level for a given hour was 57 dBA, the daytime L_{50} noise standard would be increased by an increment of 5 dBA from 55 to 60 dBA.

[b] The ordinance also states that the standards identified in this table should be reduced by 5 dBA for impulsive or simple tone noises, or for noises consisting of speech or music. "Impulsive noise" means a noise characterized by brief excursions of sound pressures whose peak levels are very much greater than the ambient noise level, such as might be produced by the impact of a pile driver, punch press or a drop hammer, typically with duration of one second or less. "Simple tone noise" or "pure tone noise" means a noise characterized by the presence of a predominant frequency or frequencies such as might be produced by a whistle or hum.

[c] The concept of "30 minutes in an hour" is equivalent to the L_{50}, which is a noise descriptor identifying the noise level exceeded one-half (50 percent) of the time. Likewise, "15 minutes in an hour," "5 minutes in an hour," and "1 minute in an hour" are equivalent to the L_{25}, $L_{8.3}$, and $L_{1.7}$, respectively. L_{max}, or maximum noise level, represents the standard defined in terms of "0 minutes in an hour" which is the noise level not to be exceeded at all in a given hour. L_{eq}, or equivalent noise level represents the standard defined in terms of "60 minutes in an hour."

SOURCE: Sonoma County, 1998.

> *Policy NE-1c*: Control non-transportation related noise from new projects such that the total noise level resulting from new sources and ambient noise shall not exceed the standards in Table NE-2 (Table 3.9-4 in this EIR).

> *Policy NE-1f*: Require development projects which do not include or affect residential uses or other noise sensitive uses to include noise mitigation measures where necessary to maintain noise levels compatible with activities planned for the proposed project site and vicinity.

The County of Sonoma General Plan Noise Element does not specifically address intermittent or short-term construction noises and there is currently no adopted noise ordinance under the Sonoma County Code. The General Plan calls for the County to adopt a noise ordinance that will include noise performance standards as outlined in Table 3.9-4 as well as exemptions, measurement methods, and procedures for variances.

Napa SD

City of Napa

The goal of the City of Napa General Plan Noise Element is to "protect Napa's residents, workers, and visitors from the deleterious effects of noise" (City of Napa, 2007). Policies contained in the Noise Element that may be applicable to the proposed project include the following:

> *Policy HS-9.2*: The City shall use CEQA and the development review processes to ensure that new development does not exceed City standards.
>
> *Policy HS-9.5*: The City shall continue to enforce state muffler and exhaust laws.
>
> *Policy HS-9.9*: When feasible and appropriate, the City shall limit construction activities to that portion of the day when the number of persons occupying a potential noise impact area is lowest.
>
> *Policy HS-9.11*: The City shall regulate construction in a manner that allows for efficient construction mobilization and activities, while also protecting noise sensitive land uses.

Chapter 8.08, *Noise Control Regulations*, of the City of Napa Municipal Code imposes a number of restrictions on construction activities. This code restricts construction activities throughout the entire duration of the project to between the hours of 7 a.m. and 7 p.m. on Monday through Friday. Construction on weekends and holidays is limited to the hours of 8 a.m. to 4 p.m. unless a permit is obtained from the City. Furthermore, the code prohibits the start up of machines and equipment prior to 8 a.m. on Monday through Friday and also prohibits the delivery of materials prior to 7:30 a.m. and after 5:00 p.m. on Monday through Friday. Machines and equipment may not be cleaned past 6 p.m. on Monday through Friday and they cannot be serviced after 6:45 p.m. on Monday through Friday. All muffler systems on construction equipment must be properly maintained and all construction and grading equipment must be shut down when not in use. All construction equipment shall not be placed adjacent to developed areas unless the equipment is provided with acoustical shielding (City of Napa, 2008).

Napa County

The main goal of the Napa County General Plan Noise Element is to "minimize the impacts of noise pollution from railroads, highways, industry, agricultural uses, airports, and recreation areas and to conduct its land use planning and development in such a manner as to minimize activities producing unacceptable noise pollution" (Napa County, 1990). This goal aims protect persons from existing or future excessive levels of noise that interfere with sleep, communication, relaxation, health, or legally permitted use of property, and to keep future planning and

development consistent with low levels of noise. One policy included in the general plan that may be applicable to the proposed project requires that environmental assessment documents for new projects include an analysis of existing and anticipated noise impacts if such are likely to impact on or be produced by the product(s) (Napa County, 1990).

Chapter 8.16 of the Napa County Code outlines noise control regulations applicable to noise sources located within the County. Exterior noise levels set forth in the code are outlined in **Table 3.9-5**.

TABLE 3.9-5
NAPA COUNTY EXTERIOR NOISE LIMITS

Receiving Land Use Category	Time Period	Noise Level (dBA)		
		Rural	Suburban	Urban
Residential (single and double)	10 p.m. – 7 a.m.	45	45	50
	7 a.m. – 10 p.m.	50	55	60
Residential (multiple and country)	10 p.m. – 7 a.m.	45	50	55
	7 a.m. – 10 p.m.	50	55	60
Commercial	10 p.m. – 7 a.m.	60		
	7 a.m. – 10 p.m.	65		
Industrial (including wineries)	Anytime	75		

SOURCE: Napa County, 2008.

Construction activities are exempt from standards set forth in **Table 3.9-5** above, however the Napa County Code requires that when technically and economically feasible, construction activities shall be conducted in such a manner that they do not exceed the noise levels listed in **Table 3.9-6** below. Aside from the limits outlined in the table, construction activities and use of construction equipment is generally prohibited between the hours of 7 p.m. and 7 a.m.

TABLE 3.9-6
NAPA COUNTY NOISE LIMITS FOR CONSTRUCTION ACTIVITIES

Time	Residential	Commercial	Industrial
Daily: 7 a.m. to 7 p.m.	75 dBA	80 dBA	85 dBA
Daily 7 p.m. to 7 a.m.	60 dBA	65 dBA	70 dBA

SOURCE: Napa County, 2008.

APPENDIX 3.10
Hazards and Hazardous Materials

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to hazardous materials and the proposed project.

LGVSD

City of San Rafael

The City of San Rafael General Plan 2020 (2003) establishes the following policies and implementation actions regarding hazards and hazardous materials that are applicable to the proposed project:

> *Policy S-10. Location of Public Improvements*: To minimize threat to human health or any extraordinary construction and monitoring expenses, avoid locating improvements and utilities in areas with dangerous levels of identified hazardous materials. When the location of public improvements and utilities in such areas cannot feasibly be avoided, effective mitigation measures will be implemented.
>
> *Policy S-12. Use of Environmental Databases in Development Review*: Review the San Rafael Fire Department's database of contaminated sites at the time a development is proposed. Undertake appropriate studies to assure identification and implementation of mitigation measures for sites on or near identified hazards.
>
> - *Action S-12a. Environmental Database*: Maintain environmental and hazardous materials-related databases, and update information on an ongoing basis. In addition, include the information in the state GeoTracker database (database of contaminated UST sites).
>
> - *Action S-12b. Environmental History*: Through the environmental review process, provide information concerning available environmental history of a site and proposed mitigation measures if warranted.
>
> *Policy S-13. Potential Hazardous Soils Conditions*: Where development is proposed on sites with known previous contamination, sites filled prior to 1974 or sites that were historically auto service, industrial or other land uses that may have involved hazardous materials, evaluate such sites for the presence of toxic or hazardous materials. The requirements for site-specific investigation are contained in the Geotechnical Review Matrix.

- *Action S-13b. Hazardous Soils Cleanup*: Require remediation and cleanup in accordance with regional and local standards prior to developing sites with impacted soil or groundwater. The required level of remediation and clean-up shall be determined by the Fire Department based on the intended use of the site and health risk to the public.

- *Action S-13c. Local Implementing Agency*: As the Local Implementing Agency (LIA) for the San Francisco Bay RWQCB, the Hazardous Materials Division shall oversee the investigation and closure of contaminated underground storage tank sites.

Policy S-14. Hazardous Materials Storage, Use, and Disposal: Enforce regulations regarding proper storage, use and disposal of hazardous materials to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.

- *Action S-14a. CUPA Program*: Continue to participate in the CUPA program.

Policy S-15. Hazardous Waste Management: Support measures to responsibly manage hazardous waste consistent with protection of the public health, welfare, safety and the environment. The City of San Rafael supports the Marin County Hazardous Waste Management Plan as adopted by the State, County and Cities within Marin County.

Policy S-16. Transportation of Hazardous Materials: Enforce federal, state and local requirements and standards regarding the transportation of hazardous materials. Support, as appropriate, legislation that strengthens safety requirements for the transportation of hazardous materials.

- *Action S-16a. Safe Transport of Hazardous Materials*: Support California Highway Patrol's efforts to ensure the safe transport of hazardous materials.

Policy S-31. New Development in Fire Hazard Areas: Design new development located on or adjacent to natural hillsides to minimize fire hazards to life and property.

- *S-31a. New Development*. Through the development review process, require appropriate mitigation measures such as fire preventive site design, landscaping and building materials, and the use of fire suppression techniques such as sprinklering.

Unincorporated Marin County

The Marin Countywide Plan (2007) sets forth the following goals, policies, and implementing programs regarding hazards and hazardous materials that are applicable to the proposed project:

Goal PS-4: Decreased Exposure to Hazardous Materials. Reduce the risks to human and environmental health from hazardous materials.

- *Policy PS-4.1: Regulate and Reduce Hazardous Material Use*. Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.

- *Implementing Program PS-4.a: Regulate Development Near Waste Sites*. Adopt specific regulations for development of land on or adjacent to a known solid or hazardous waste site.

- *Implementing Program PS-4.b: Regulate Hazardous Material Use*. Identify businesses that use, store, dispose of, or transport hazardous materials, and require them to follow measures that protect public health and safety.

- *Implementing Program PS-4.c: Restrict Transport.* Work with federal and state agencies to require all transport of hazardous materials to follow approved routes.

- *Implementing Program PS-4.d: Prepare for Hazardous Materials Incidents*. Plan for response to an emergency involving a major release of hazardous materials.

- *Implementing Program PS-4.e: Precautionary Principle*. Continue to implement the precautionary principle in County purchases and actions, which calls for a careful analysis and selection of the available alternatives presenting the least potential threat to human health and natural systems.

- *Implementing Program PS-4.f: Reduce Hazardous Materials on County Property*. Develop and implement a policy to reduce the use of hazardous materials in County buildings, on County property, and in County operations.

Goal EH-4: Safety from Fires. Protect people and property from hazards associated with wildland and structural fires.

- *Policy EH-4.1: Limit Risks to Structures*. Ensure that adequate fire protection is provided in new development and when modifications are made to existing structures.

- *Policy EH-4.3: Adopt and Implement a Fire Management Plan*. Develop a proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.

- *Policy EH-4.5: Regulate Land Uses to Protect from Wildland Fires*. Use land use regulations, including but not limited to subdivision approvals and denials, as means of protecting people and property from hazards associated with wildland fires.

  - *Implementing Program EH-4.c: Require Compliance with Fire Department Conditions*. Continue to refer land development and building permit applications to the County Fire Department or local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

  - *Implementing Program EH-4.d: Review Applications for Fire Safety*. Require applicants to identify defensible space and compliance with fire safety standards, and continue to work with local and State fire agencies to ensure that California Fire Code (with local amendments), County Development Code, and State standards for construction are applied uniformly countywide.

- *Implementing Program EH-4.e: Require Sprinkler Systems*. Continue to require installation of automatic fire sprinkler systems in all new structures and existing structures undergoing substantial remodeling, and provide incentives for sprinkler installation in all other habitable structures, especially those in high fire hazard areas.

- *Implementing Program EH-4.f: Require Fire-Resistant Roofing and Building Materials*. Continue to require and provide incentives for Class A fire-resistant roofing for any new roof or replacement of more than 50 percent of an existing roof. Work with Marin County fire departments to prepare and adopt an ordinance requiring fire-resistant building materials in extreme and high fire hazard areas.

- *Implementing Program EH-4.h: Require Adequate Clearance*. Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property.

- *Implementing Program EH-4.k: Adopt Amended Urban Wildlands Interface Regulations*. Work with Marin fire departments to prepare and adopt urban wildlands interface regulations for new development and substantial remodels in order to reduce fire hazards in high and extreme fire hazard areas.

- *Implementing Program EH-4.o: Support a Fire Management Plan*. Adopt a resolution supporting a Fire Management Plan (including a fuel break plan), and encourage Marin cities and towns to also support its recommendations.

Novato SD

City of Novato

The City of Novato General Plan (1996, and amendments), lists the following objectives, policies, and programs with regard to hazards and hazardous materials that are applicable to the proposed project:

SF Objective 8: Reduce hazards of transportation, storage and disposal of hazardous wastes and hazardous materials.

- <u>*SF Policy 28. Measures to Reduce Hazards*</u>: Consider measures to protect the public health from the hazards associated with the transportation, storage and disposal of hazardous wastes.

  - *SF Program 28.1*: Continue to refer land use and transportation decisions and other programs involving hazardous materials regulations to the appropriate agencies.

  - *SF Program 28.3*: Consider adoption of a Hazardous Materials and Waste Ordinance that defines hazardous waste and hazardous materials and facilitates implementation of State and County regulations and programs regarding hazardous substances.

- *SF Program 28.4*: Continue to implement the Commercial Occupancy Ordinance requiring notification of all hazardous substances that are transported, stored, treated or could be released accidentally into the environment.

- *SF Policy 30. Hazardous Materials Storage*: Strictly regulate the storage of hazardous materials.

  - *SF Program 30.1*: Regulate and enforce the storage of hazardous materials under California Administrative Code Title 19 requirements.

  - *SF Program 30.2*: Revise the Zoning Ordinance to require secondary containment facilities and a buffer zone adequate to protect public health and safety on properties with hazardous materials storage and/or processing activities. This program requires industries and businesses, which store or process hazardous materials to provide secondary containment facilities and a buffer zone between the installation and property boundaries sufficient to protect the public health and safety.

- *SF Policy 31. Truck Routes for Hazardous Materials Transport*: Develop, in cooperation with the County and neighboring cities, regulations prohibiting through-transport of hazardous materials by truck on the local street systems and requiring that this activity be limited to state highways.

  - *SF Program 31.1*: Consider adopting a Local Hazardous Material Route Plan and install signage and publicize routes for hazardous materials transport in Novato. Adopt an ordinance designating specific routes for transport of hazardous materials.

SF Objective 5: Reduce Fire Hazards.

- *SF Policy 16. Fire Risk in New Development*: Review all development proposals for fire risk, and require mitigation measures to reduce the probability of fire.

  - *SF Program 16.1*: Continue the Novato Fire Protection District's review of all development proposals to reduce fire risk.

  - *SF Program 16.2*: Require new development within mapped high fire hazard zones established by the Novato Fire Protection District and/or the Marin County Fire District to develop and implement a Vegetation Management Plan. The Plan shall be part of the development application and approved by the Novato Fire Protection District and the City. The Plan shall be developed by an arborist or vegetation management specialist. The City shall work with the Fire District to ensure that actions recommended in the Plan are implemented. The Novato Fire Protection District has the right to review properties to judge whether actions recommended in the Vegetation Management Plan are being properly implemented in a timely fashion.

  - *SF Program 16.4*: Assess development applications on sites beyond a five-minute response time from a fire station to ensure that acceptable mitigation measures are provided.

- *SF Program 16.5*: Continue to enforce the Fire Safety Ordinance requiring sprinkler systems for all new commercial/industrial development greater than 2,500 square feet and all new residential development regardless of size.

- *SF Program 16.6*: Limit building envelopes in high fire risk areas to provide for "defensible space" against fires.

- *SF Policy 17. Level of Fire Protection*: Work with Novato Fire Protection District to help ensure a continued high level of fire protection.

  - *SF Program 17.1*: Continue to require all new development to meet the adopted fire safe regulations originally developed by the state and currently adopted as an appendix to the Fire Code.

- *SF Policy 18. Vegetation Management*: Continue to implement an effective and environmentally sound vegetation management and weed abatement program.

  - *SF Program 18.1*: Continue to require the use of the following methods of weed abatement wherever possible: use of mechanical rather than chemical removal of weeds; reseeding with native bunchgrass varieties in sloping disturbed soils; and limiting weed abatement activities in areas with known endangered plant and animal species. Strongly encourage a zone system of landscaping, as per Fire District standards, for defensible space around buildings in high fire risk areas.

- *SF Policy 19. State Building Code*: Continue to enforce the State Building Code (Uniform Building Code).

  - *SF Program 19.1*: Continue to update and enforce the City's Building Code and Fire Code provisions.

  - *SF Program 19.2*: Continue to require a greater degree of fire resistance in roof coverings and exterior building materials for structures within or adjacent to hazardous areas than what is specified in the UFC, as determined by the Chief Building Official upon making of findings specified in Health and Safety Code § 13143.4.

- *SF Policy 20. Peak Load Water Supply*: Work with the North Marin Water District and the Novato Fire Protection District to ensure that sufficient water flow exists in fire hydrants throughout Novato, based on peak demand.

  - *SF Program 20.1*: Continue to require that all new developments be provided with sufficient fire flow facilities at the time of permit issuance.

Unincorporated Marin County

The Marin Countywide Plan, which is applicable to the Novato SD service area, is discussed under the LGVSD service area above.

SVCSD

City of Sonoma

The City of Sonoma 2006-2020 General Plan Update (2006) sets forth the following goals, policies, and implementation measures with respect to hazardous materials and wildland fires:

Goal PS-1: Minimize risks to life and property associated with seismic and other geologic hazards, fire, hazardous materials, and flooding.

- *Policy 1.3*: Ensure that all development projects provide adequate fire protection.
  - *Implementation Measure 1.3.1*: Review all proposed projects for adequacy of fire protection, including: response time; emergency access, water supply, and fire flow; vegetation clearance and visible addressing; spacing between buildings; construction materials; and refuse removal.
- *Policy 1.4*: Coordinate and maximize emergency medical service and firefighting capabilities in the city and Sonoma Valley.
  - *Implementation Measure 1.4.3*: Work with Schell-Vista Fire District to monitor fire safety and hazardous material use, storage, and transport in the Eighth Street East area.
- *Policy 1.6*: Ensure that all operations that use, store, and/or transport hazardous materials to comply with all applicable regulations.
  - *Implementation Measure 1.6.1*: Maintain contingency plans for responding to spills, accidents, and fires involving hazardous materials.
  - *Implementation Measure 1.6.2*: Provide information to assist businesses in complying with regulations regarding use, storage, and transport of hazardous materials.

Sonoma County

The Sonoma County Draft General Plan Update 2020 (Sonoma County, 2008) establishes the following goals, objectives, and policies with respect to hazards and hazardous materials that are applicable to the proposed project:

Goal PS-4.1: Prevent unnecessary exposure to people and property to risks of damage or injury from hazardous materials.

- *Objective PS-4.2*: Regulate the transport, storage, use, and disposal of hazardous materials in order to reduce the risks of damage and injury from hazardous materials to acceptable levels.
  - *Policy PS-4a*: While maintaining the autonomy granted to it pursuant to state zoning laws, implement state and county requirements for the storage, transport, disposal, and use of hazardous materials, including requirements for management plans, security precautions, and contingency plans.

- *Policy PS-4c*: Require a use permit for any commercial or industrial use involving significant quantities of hazardous materials. Hazardous materials management plans shall be required as a condition of approval of such permits.

- *Policy PS-4d*: Where allowed by law, regulate the transportation of hazardous materials to minimize the potential for damage. Seek regulation by other agencies consistent with adopted County policies.

- *Policy PS-4g*: Prepare a draft "Hazardous Materials Management Plan," which provides for the long-term prevention of releases of hazardous materials, effective responses to such releases, the safe transport and disposal of hazardous wastes, and a public information program.

Goal PS-3: Prevent unnecessary exposure of people and property to risks of damage or injury from wildland and structural fires.

- *Objective PS-3.1*: Continue to utilize complete data on wildland and urban fire hazards.

- *Objective PS-3.2*: Regulate new development to reduce the risks of damage and injury from known fire hazards to acceptable levels.

  - *Policy PS-3a*: Continue to utilize available information on wildland and structural fire hazards.

  - *Policy PS-3b*: Consider the severity of natural fire hazards, potential damage from wildland and structural fires, adequacy of fire protection and mitigation measures consistent with this element in the review of projects.

  - *Policy PS-3c*: Continue to adopt revisions to the Uniform Fire and Building Code and other standards which address fire safety as they are approved by inspection organizations and the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.

  - *Policy PS-3d*: Require on-site detection and suppression, including automatic sprinkler systems, where available services do not provide acceptable levels of protection.

  - *Policy PS-3e*: Refer projects and code revisions to the Department of Emergency Services and responsible fire protection agencies for their review and comment.

  - *Policy PS-3g*: Encourage strong enforcement of state requirements for fire safety by the California Department of Forestry.

  - *Policy PS-3l*: Work with the California Department of Forestry and Fire Protection to identify areas of high fire fuel loads and opportunities to reduce those fuel loads in "areas with very high or high potential for large wildland fires" and High Fire Hazard Severity Zones.

Napa SD

City of Napa

The City of Napa General Plan (2006) establishes the following goal and policies with respect to hazards and hazardous materials that are applicable to the proposed project:

Goal HS-7: To reduce the risks to health and safety from hazardous wastes.

- *Policy HS-7.1*: The City shall reevaluate, modify if necessary, and implement changes to the short-term goals of the *Household Hazardous Wastes Element.*
- *Policy HS-7.2*: The City shall support the County's proposed *Integrated Waste Management Plan.*
- *Policy HS-7.3*: The City shall support the County's role as CUPA for all County jurisdictions.

Goal HS-5: To reduce the risk to life and property from wildland fires.

- *Policy HS-5.1*: The City shall require that development in high fire hazard areas provide adequate access roads, onsite fire protection systems, signage, flame-retardant building materials, and fire breaks.
- *Policy HS-5.2*: The City shall continue to implement the Uniform Fire Code as the City's basic regulations for fire prevention and suppression.
- *Policy HS 5-3*: The City shall continue to implement the Hazardous Fire Areas Fire Protection Standard in the city's wildland/urban intermix areas in order to reduce the risk from wildland fires.

Napa County

The Napa County General Plan Update (2007) includes the following goal and action item regarding hazardous materials applicable to the proposed project:

Goal SAF-5: All development projects proposed on sites that are suspected or known to be contaminated by hazardous materials and/or are identified in a hazardous material/waste search shall be reviewed, tested, and remediated for potential hazardous materials in accordance with all local, state, and federal regulations.

- *Action Item SAF-31.1*: The County shall require written confirmation from applicable local, regional, state, and federal agencies that known contaminated sites have been deemed remediated to a level appropriate for proposed land uses, prior to the County approving site development or require an approved remediation plan that demonstrates how contamination will be remediated prior to site occupancy. This documentation will specify the extent of development allowed on the remediated site as well as any special conditions and/or restrictions on future land uses.

Goal SAF-3: Effectively manage forest and watersheds, and protect homes and businesses from fire and wildfire and minimize potential losses of life and property.

- *Policy SAF-15*: The County shall coordinate with the State Department of Forestry and Fire Protection and fire agencies in neighboring counties to plan for future fire prevention and suppression needs.

- *Policy SAF-16*: Consistent with building and fire codes, development in high wildland fire hazard areas shall be designed to minimize hazards to life and property.

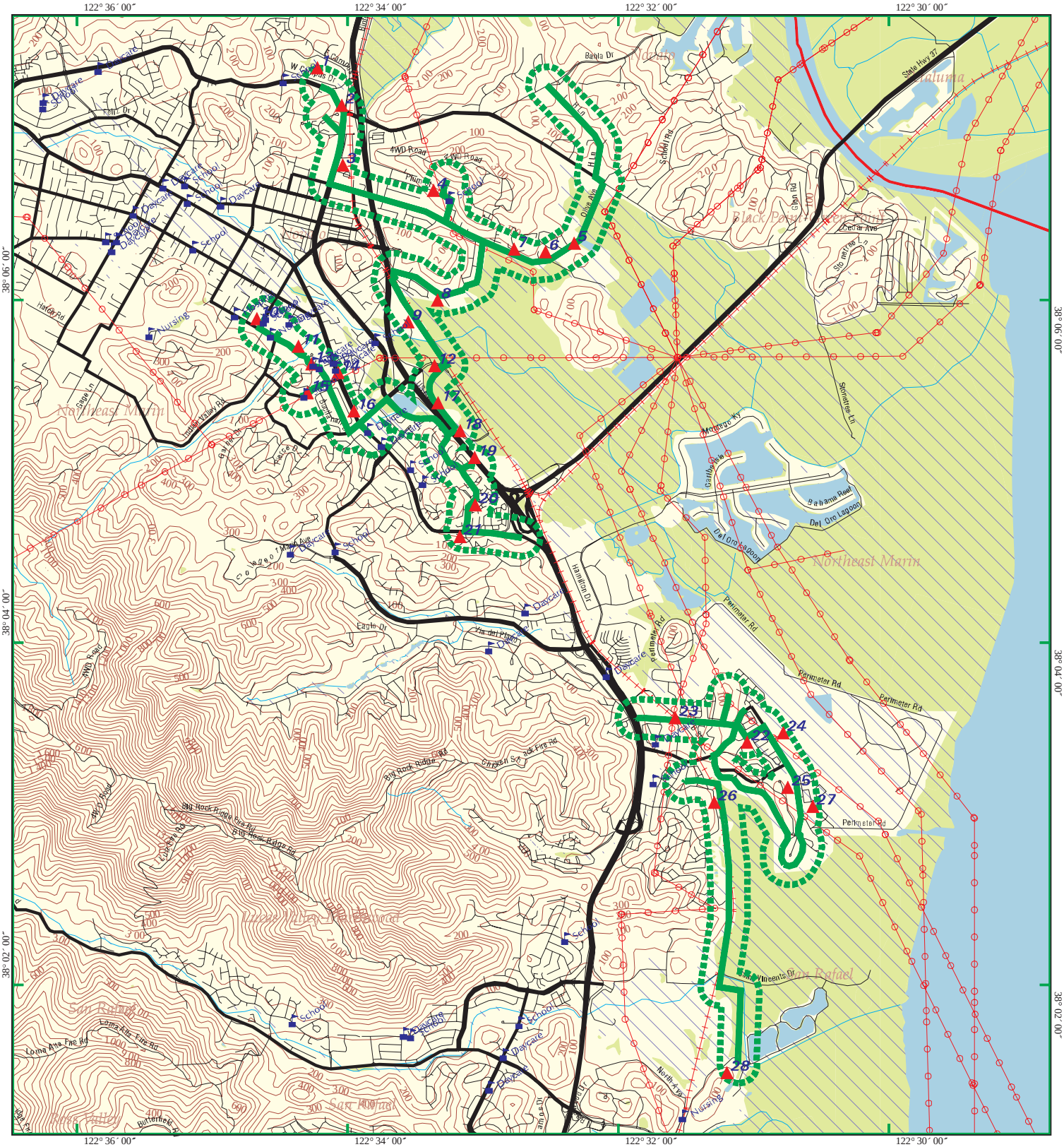
    - *Action Item SAF-16.1*: Develop site criteria and construction standards for development in high fire hazard areas, and adopt standards to restrict urban development (as defined in the Land Use Element) in high wildland fire hazard areas unless adequate fire services are provided.

- *Policy SAF-17*: The County supports the use of prescribed fuel management programs, including prescribed burns and brush clearing, for managing fire hazardous areas; to reduce wildfire hazard, improve watershed capabilities, promote wildlife habitat diversification, and improve grazing.

- *Policy SAF-20*: All new development shall comply with established fire safety standards. Design plans shall be referred to the appropriate fire agency for review of the following:

    1) Adequacy of water supply.
    2) Site design for fire department access in and around structures.
    3) Ability for a safe and efficient fire department response.
    4) Traffic flow and ingress/egress for residents and emergency vehicles.
    5) Site-specific built-in fire protection.

APPENDIX 3.10A
EDR Data Base Maps



EDR DataMap ® - Corridor Study

Novato Service Area

EDR® Environmental Data Resources Inc

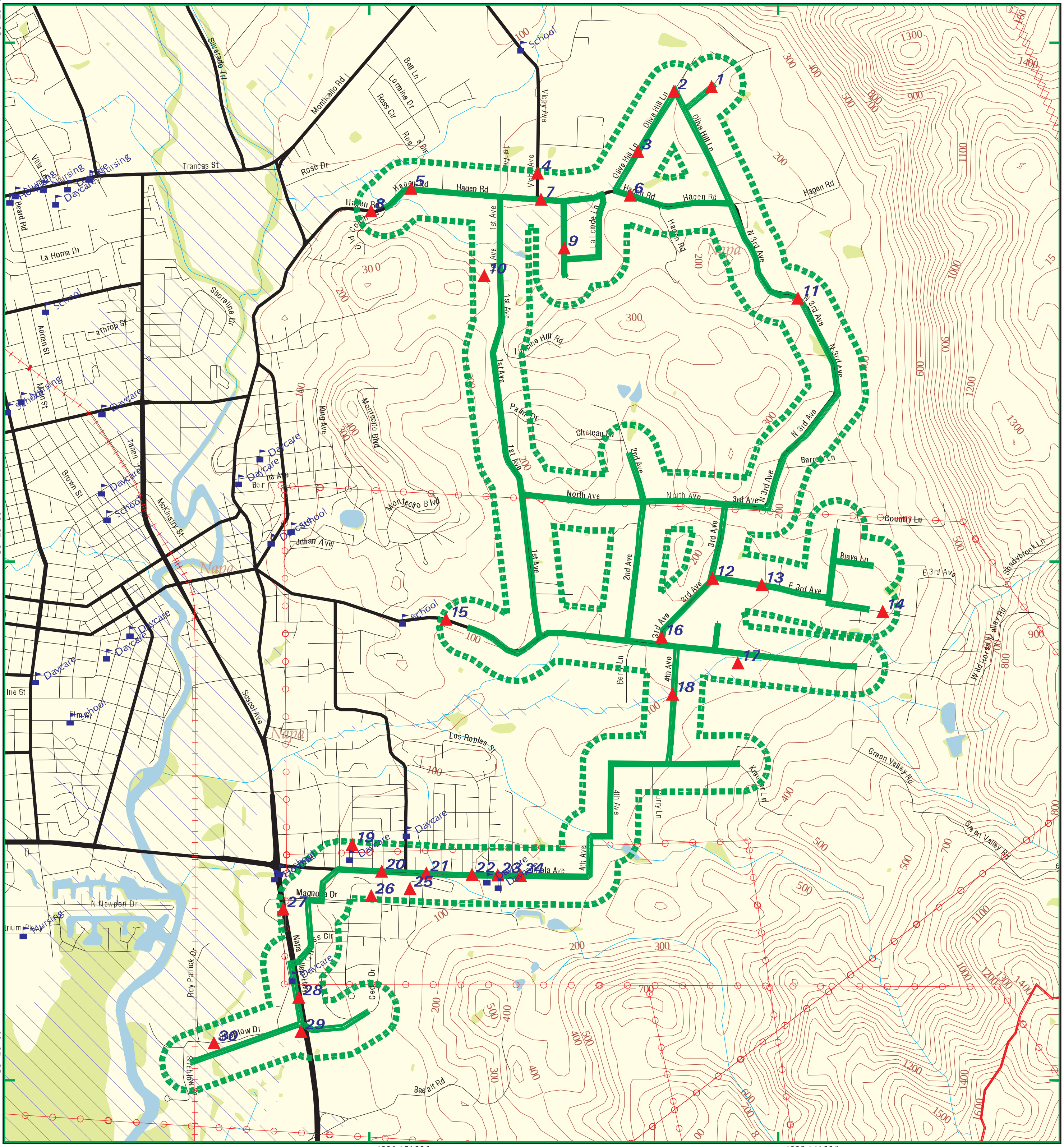
- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- National Wetland Inventory

N

0 1/4 1/2

Scale in Miles

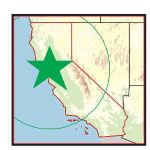
02290570.1r - 26 Aug 08



EDR DataMap ® - Corridor Study

Napa SD MST Area

EDR® Environmental Data Resources Inc



Napa, CA

Listed Sites	Waterways	Water
Earthquake Epicenters (Richter 5 or greater)	Railroads	Superfund Sites
Search Boundary	Contour Lines	Federal DOD Sites
Roads	Pipelines	Indian Reservations BIA
Major Roads	Powerlines	100-Yr Flood Zones
	Fault Lines	National Wetland Inventory

N

0 1/4 1/2

Scale in Miles

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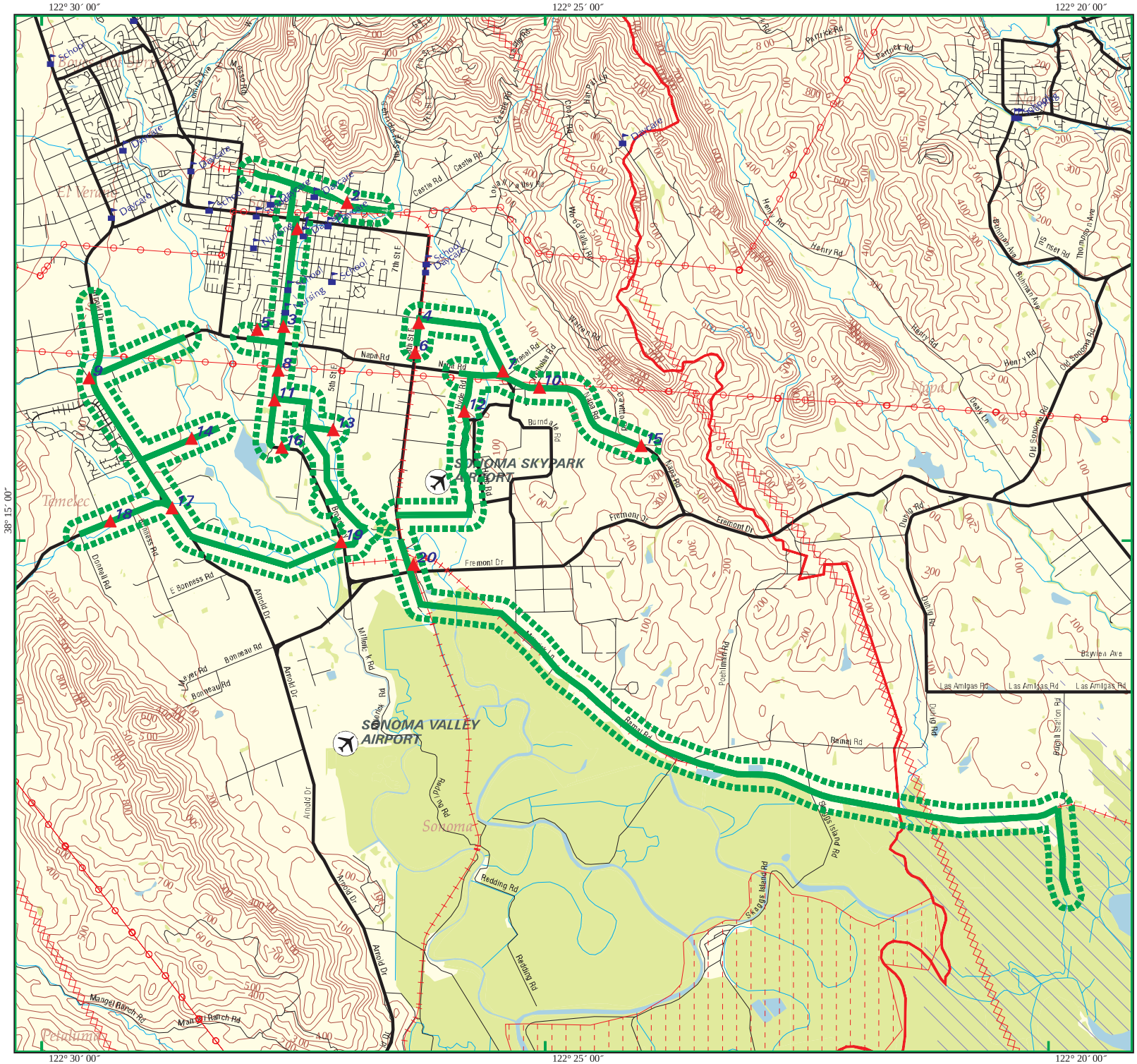

APPENDIX 3.11
Public Services and Utilities

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to public services and utilities and the proposed project.

LGVSD

City of San Rafael

The City of San Rafael General Plan contains policies that are applicable to the proposed project as it relates to public services.

> *Policy S-15.* Hazardous Waste Management. Support measures to responsibly manage hazardous waste consistent with protection of the public health, welfare, safety and the environment. The City of San Rafael supports the Marin County Hazardous Waste Management Plan as adopted by the State, County and Cities within Marin County.
>
> *Policy S-26*. Fire and Police Services. Maintain adequate cost-effective fire protection, paramedic and police services. Minimize increases in service needs from new development through continued fire prevention and community policing programs.
>
> *Policy I-10*. Sewer Facilities. Existing and future development needs should be coordinated with responsible districts and agencies to assure that facility expansion and/or improvement meets Federal and State standards and occurs in a timely fashion.
>
> *Policy I-13*. Wastewater Treatment and Reuse. Encourage additional water recycling at Las Gallinas Valley Sanitary District and encourage the Central Marin Sanitation Agency to investigate recycling and reuse of its treated wastewater.
>
> *Policy CON-20*. Water Conservation. Encourage water-conserving practices in businesses, homes and institutions and increase the use of recycled water.
>
> *Policy CON-20b.* Water Recycling. Support the extension of recycled water distribution infrastructure. Require the use of recycled water where available.

Unincorporated Marin County

The Marin Countywide Plan establishes governs public services in the unincorporated areas of Marin County. The following policies are relevant to the proposed project:

Policy PFS-1.4: Reduce Demand on Public Facilities. Reduce per capita and total demand for water and wastewater treatment, and enhance storm water management through integrated and cost-effective design, technology, and demand reduction standards for new development and redevelopment.

Policy PFS-2.1: Conserve Water and Utilize Sustainable Sources. Promote conservation to increase the responsible use and reliability of water supplies. Reduce the waste of potable water through efficient technologies, design, and management practices, and through better matching of the source and quality of water to the user's needs.

Policy PFS-4.2: Protect Environmental Health. Require the use of waste processing and disposal techniques that prevent the contamination or other impairment of natural resources.

Policy PFS-4.3: Plan for Waste Transformation or Disposal. Plan for the transformation or elimination of waste materials that cannot be reduced, recycled, or composted.

Policy PS-3.1: Plan Thoroughly for Emergencies. Ensure that the County, its citizens, businesses, and services are prepared for effective response and recovery in the event of emergencies or disasters.

Policy PS-3.2: Safe Public Structures. Protect public health and safety through appropriate siting and rehabilitation of public facilities.

Policy PS-4.1: Regulate and Reduce Hazardous Material Use. Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.

Novato SD

City of Novato

The City of Novato General Plan contains policies that are applicable to the proposed project as it relates to public services.

SF Policy 14 Emergency Facilities. Identify essential emergency facilities and ensure that they will function in the event of a disaster.

SF Program 14.3: Continue to maintain an emergency evacuation routes system. Consider establishing evacuation route standards, such as road widths.

SF Policy 17 Level of Fire Protection. Work with Novato Fire Protection District to help ensure a continued high level of fire protection.

SF Program 17.4: Require adequate access for emergency vehicles, adequate street width and vertical clearance, and parking restrictions for new development. All development that includes private access roads or fire roads shall provide access rights and keys to any gates to the Novato Fire Protection District and shall be deeded accordingly. (Draft EIR, pages 203-204, Impact 4.11A)

SF Policy 20 Peak Load Water Supply. Work with the North Marin Water District and the Novato Fire Protection District to ensure that there exists sufficient water flow in fire hydrants throughout Novato, based on peak demand.

SF Policy 26 Level of Emergency Medical Response. Encourage the Novato Fire Protection District to continue maintaining a high level of emergency medical response.

PF Policy 4 Management of Public Services. Work with public service agencies to ensure that those agencies have the means to provide services required by Novato residents and businesses.

> *PF Program 4.1*: Work with the Novato Fire Protection District to ensure that the District can continue to provide adequate fire protection and emergency response. The Novato Fire Protection District maintains its own Level of Service standards to determine adequate protection and response.
>
> *PF Program 4.2*: Work with the Novato Sanitary District to ensure that wastewater is adequately collected, treated, and disposed of.
>
> *PF Program 4.8*: Work with solid and liquid wastewater agencies to ensure compatibility of nearby land uses with their facilities.

PF Policy 6 Water Conservation. Develop and implement water conservation programs for Novato.

> *PF Program 6.2*: Use treated wastewater for irrigation of City facilities and encourage wastewater irrigation at other public and private facilities, where practicable.
>
> *PF Program 6.4*: Consider developing a plan in conjunction with the Sanitary District and Water Districts to promote and maximize to the extent feasible the reuse of treated wastewater and consider enacting an ordinance to have developments provide wastewater distribution facilities in conformance with the Plan.

EN Policy 28 Energy Conservation. Consider land use patterns and policies that promote energy conservation.

The Land Use Chapter encourages mixed use projects in and near the Downtown and in neighborhood shopping centers. The Transportation Chapter contains policies and programs that encourage reductions in the use of single-occupant vehicles and encourage the use of bicycles and other travel modes that do not consume fossil fuels.

EN Policy 29 Energy Conservation Measures in Buildings. Reduce energy consumption by requiring structures to meet the energy conservation requirements stipulated in the State Building Code and State Title 24 regulations.

> *EN Program 29.1*: Adopt a program to encourage retrofitting of energy-saving features in existing structures by providing information, technical assistance, and other incentives.
>
> *EN Program 29.2*: Review, and if necessary revise, planning and regulatory documents to ensure if they adequately promote energy efficiency, make use of sustainable renewable resources, and protection of solar access.

EN Policy 30 Energy Efficiency in Public Programs. Assure energy efficiency in local government operations.

EN Program 30.1: Continue to conduct energy management studies to evaluate opportunities for energy savings and use of local renewable sources.

EN Program 30.2: Incorporate energy conservation measures in the design of capital improvement projects.

EN Program 30.3: Consider using electric, zero-emission vehicles or alternative fuel and alternate energy efficient building materials.

EN Policy 31 Development Review Process. Consider energy conservation in the development review process.

EN Program 31.1: Consider adopting a solar access ordinance that would require all development applications to be reviewed for potential energy conservation measures and design, including site orientation, building design and aesthetics and use of materials, landscaping and solar access.

EN Program 31.2: Make available to the public PG&E literature and other information on energy conservation and energy efficient design.

EN Program 31.3: Analyze energy consumption aspects of site design and service delivery, such as drive-up windows.

EN Program 31.4: Encourage use of alternative energy-efficient building materials.

Unincorporated Marin County

See LGVSD discussion above.

SVCSD

City of Sonoma General Plan

The City of Sonoma General Plan contains policies that are applicable to the proposed project as it relates to public services.

Policy PS-1.3. Ensure that all development projects provide adequate fire protection.

Policy PS-1.4. Coordinate and maximize emergency medical service and firefighting capabilities in the city and Sonoma Valley.

Sonoma County

The Public Facilities and Services Element of the Sonoma County General Plan (Sonoma County, 1998) includes the following goals and objectives for maintaining utilities:

Sewer Services

Goal PF-1: Assure that water supply and wastewater management facilities are adequate to meet projected needs and are provided in a manner that preserves riparian habitats, supports

water dependent resources, enhances recreational opportunities, and preserves and enhances water quality and the environment.

Objective PF-1.1: Plan for healthful water supplies and wastewater facilities adequate to serve the growth projected in the general plan.

Objective PF-1.2: Operate County water and wastewater facilities in compliance with applicable state and federal standards.

Objective PF-1.4: Manage groundwater resources in order to avoid withdrawals which exceed the replenishment of affected groundwater basins.

PF-1f: Use water effectively and reduce water and wastewater system demand by:

1) Requiring water conserving design and equipment in new construction,

2 Encouraging water conserving landscaping and other conservation measures.

3) Encouraging retrofitting with water conserving devices,

4) Designing wastewater systems to minimize inflow and infiltration to the extent economically feasible

PF-2a: Plan, design, and construct park and recreation, fire and emergency medical, public education, and solid waste services and public utilities in accordance with projected growth, except as provided in policy LU-4d on page 36.

PF-2b: Work with the cities to provide park and recreation, public education, fire and emergency medical, and solid waste services, and public utilities. Use proposed annexations, redevelopment agreements, revenue sharing agreements, and the CEQA process as tools to ensure that incorporated development pay its fair share toward provision of these services.

Napa SD

City of Napa

The City of Napa General Plan contains policies that are applicable to the proposed project as it relates to public services.

Policy CS-1.1. The City shall plan and build infrastructure improvements that will: (1) accommodate growth demands without lowering levels of service; (2) support central city revitalization efforts; and (3) provide aesthetic enhancements to the city's major gateways and scenic corridors

Policy CS-2.1. The City shall provide services and personnel necessary to maintain community order and public safety.

Policy CS-2.2.The City shall endeavor to maintain a police and fire force sufficiently staffed and deployed to sustain a five-minute maximum response time to any call involving an immediate danger of loss of life or serious injury (response time means from the time the call is received in dispatch to the time the first emergency unit is on the scene).

Policy CS-5.1. The City shall maintain adequate personnel and equipment necessary to provide fire suppression services for the City of Napa.

Policy CS-7.2. The City shall maintain personnel to sustain a maximum response time of five minutes to any call involving an immediate danger of loss of life as a result of a medical emergency.

Policy CS-9.5. The City shall evaluate the feasibility and pursue the efficient use of reclaimed wastewater in appropriate locations to offset the demand for potable water supplies.

Policy CS-10.1. The City shall promote reduced wastewater system demand through efficient water use by: a. Requiring water-conserving design and equipment in new construction; b. Encouraging retrofitting with water-- conserving devices

Policy CS-10.2. The City shall support continued efforts by the Napa Sanitation District to promote the use of reclaimed wastewater.

Napa County

The Napa County General Plan contains policies relevant to the proposed project as it relates to public services.

Policy SAF-4: Encourage intergovernmental and regional cooperation directed toward providing for a continuing high level of public services and coordination of services during a disaster.

Policy SAF-15: The County shall coordinate with CAL FIRE and fire agencies in neighboring counties to plan for future fire prevention and suppression needs.

Policy SAF-18: The County should set a good example and meet or exceed fire safety standards and defensible space requirements for all County buildings and roads.

3.2: Encourage construction, building maintenance, landscaping, and transportation practices that promote energy and water conservation and reduce green-house gas emissions.

3.2.1: Implement a sustainability program that includes quantified objectives, standards and incentives for green construction and assistance to local businesses and agricultural operations to institute green practices for construction and land, energy, and water conservation.

APPENDIX 3.12
Cultural Resources

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to the cultural resources and the proposed project.

LGVSD

City of San Rafael

The City of San Rafael General Plan establishes policies that are intended to preserve cultural and historical resources.

> *CA 13. Historic buildings and areas*: Preserve buildings and areas with special and recognized historic, architectural or aesthetic value including but not limited to those on the San Rafael Historical/Architectural Survey. New development and redevelopment should respect architecturally and historically significant buildings and areas.
>
> - *CA-13b. Preservation Ordinance*: Continue to implement the City's Historic Preservation Ordinance through the design review process. Update the City's Historic Preservation Ordinance and review the development application review procedures for the various classifications of buildings on the Historical Architecture Survey, including effective ways to review proposed changes to historic properties.
>
> - *CA-13c. Historic Preservation Advisory Committee*: Establish a technical advisory committee or contract with an architectural historian, to provide the Design Review Board and Planning Commission with advice in design matters and policies related to the preservation and/or modification of historic structures.
>
> *CA-14. Reuse of Historic Buildings*: Encourage the adaptation and reuse of historic buildings, in order to preserve the historic resources that are a part of San Rafael's heritage.
>
> - *CA-14c. Incentives*: Investigate the use of incentives such as transfer of development rights, easements, and property tax relief to encourage preservation of historic buildings.
>
> *CA-15. Protection of Archaeological Resources*: Recognize the importance of protecting significant archaeological resources by 1) identifying, when possible, archaeological resources and potential impacts on such resources; 2) providing information and direction to property owners in order to make them aware of these resources, and 3) implementing measures to preserve and protect archaeological resources.

- *CA-15a. Archeological Resources Ordinance*: Continue to implement the existing Archeological Resources Ordinance.

Unincorporated Marin County

The Marin Countywide Plan has identified the following goals, policies, and implementation measures relevant to historic resources.

Goal HAR-1. Historical Resource Protection: Identify and protect archaeological and historical resources as major contributors to quality of life and community vitality in Marin.

Policies

HAR-1.1 Preserve Historical Resources: Identify archaeological and historical resource sites.

HAR-1.3 Avoid Impacts to Historical Resources: Ensure that human activity avoids damaging cultural resources.

HAR-1.5 Regulate Alteration of Historical Buildings: Limit the ability to modify historical structures, and require development to respect the heritage, context, design, and scale of older structures and neighborhoods.

Implementation Measures

- *HAR-1.a Map Resource Areas.* Update the County sensitivity map (not site specific) that identifies potential locations of archaeological resources, and survey and evaluate existing archaeology resources every three years (while maintaining confidentiality regarding the location of archaeological sites). Consult with FIGR as appropriate in map updates.

- *HAR-1.d Require Archaeological Surveys for New Development*. Require archaeological surveys conducted on site by a State-qualified and FIGR recommended archaeologist for new development proposed in areas identified as potential resource locations on the County sensitivity map (see Program HAR-1.a).

- *HAR-1.f Involve Appropriate Authorities*. Refer development proposals on or near cultural resource sites to the California Archaeological Inventory, the Northwest Regional Office of the California Historical Resources Information System, and/or Native American representatives, as appropriate.

- *HAR-1.m Require Design Compatibility*. Require projects on sites with or adjacent to cultural resources to complement the appearance of those resources and provide adequate buffers to protect them from potential adverse impacts.

- *HAR 1.p Consultation Regarding Confidentiality of Important Sites.* If land designated or proposed to be designated as open space contains a historical resource (as defined in Public Resources Code section 21084.1), with cultural significance, the County shall conduct consultations with FIGR. The purpose of the process is to determine the level of confidentiality required to protect the cultural resource and to provide an appropriate level of dignity in any management plan.

Novato SD

City of Novato

The City of Novato General Plan specifies that "Novato's archaeological and historic resources should be preserved. They provide a link to the past and strengthen the City's sense of place and community identity" (Novato, Chapter XI –Community Identity). The applicable objectives, policies, and programs are presented below.

CI Objective 11: Preserve archaeological and historic resources. CEQA requires evaluation of any archaeological resource on the site of a development project. Unique resources, as defined by State law, should be protected, either by physical measures or by locating development away from the site.

CI Policy 30 Archaeological Resources Protection: Continue to protect archaeological resources.

- *CI Program 30.1*: Require that areas found to contain significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist.
- *CI Program 30.2*: Require development applicants to research records for sites identified as having a potential for archaeological resources, to determine if a survey has been made and if resources have been identified. If there has been no survey, the City may require that the applicant conduct one.
- *CI Program 30.3*: Halt all work if archaeological resources are uncovered during construction, and require an evaluation by a qualified archaeologist prior to recommencing construction.
- *CI Program 30.4*: Locate and/or design development to avoid impacts on sites with identified archaeological resources by placing building to avoid the site, incorporating the site into a permanent open space area, covering the site with a layer of soil, deeding the site as a permanent conservation easement, or taking other actions recommended by the archaeologist, as approved by the City.
- *CI Program 30.5*: If site has potential for archeological considerations, institute measures to protect these resources.

CI Policy 31 Historic Buildings, Sites and Districts. Identify, recognize and protect sites, buildings, structures and districts with significant cultural, aesthetic and social characteristics which are part of Novato's heritage.

- *CI Program 31.1*: Adopt a Cultural Resources Management Ordinance to define, identify, evaluate, protect and preserve sites, buildings, structures, districts and objects that reflect significant elements of Novato's cultural, social, economic, political, aesthetic and architectural heritage use the Novato History Museum documents identifying 80 historic buildings and sites in Novato as a resource in developing the ordinance as well as the information regarding the existing historical districts.

Unincorporated Marin County

See LGVSD discussion above.

SVCSD

City of Sonoma

The following policy from the City of Sonoma General Plan is relevant to historic resources:

> *Policy 5.8*: Encourage the designation and preservation of local historic structures and landmarks, and protect cultural resources.
>
> - *Implementation Measure 5.8.2*: Refer development proposals to the California Archaeological Inventory at Sonoma State University to ensure that important archeological sites are identified and protected.

Sonoma County

The following goal and objectives from the Sonoma County General Plan are applicable to the proposed project as it relates to existing historic resources:

> **Goal OS-9:** Preserve significant archaeological and historical sites which represent the ethnic, cultural, and economic groups that have lived and worked in Sonoma County. Preserve unique or historically significant heritage or landmark trees.
>
> *Objective OS-9.2*: Encourage preservation of historic building or cemeteries by maintaining a Landmarks Commission to review projects which may affect historic structures or other cultural resources.
>
> *Objective OS-9.3*: Encourage preservation of archaeological resources by reviewing all development projects in archaeologically sensitive areas.
>
> *Objective OS-9.4*: Identify and preserve heritage and landmark trees.
>
> *Implementation Measures*
>
> - *OS-9a*: Designate the County Landmarks Commission to review projects within designated historic districts.
>
> - *OS-9f*: Refer applications for discretionary permits to the Northwest Information Center to determine if the project site might contain archaeological or historical resources. If a site is likely to have these resources, require a field survey and include mitigation measures if needed. Discourage paving over resources.
>
> - *OS-9g*: Use the Heritage or Landmark Tree Ordinance and the design review process to protect trees.

Napa SD

City of Napa

Goals and Policies intended to preserve historic resources are established in the City of Napa General Plan.

Goal HR-1: To preserve and maintain sites, buildings, and landscapes that serve as significant, visible reminders of the city's social, architectural, and agricultural history.

Policies

HR-1.4: The City shall review and strengthen its present legal framework and administrative procedures governing projects affecting historical resources.

Implementation Programs

- *HR-1.C*: The City shall develop a parcel-specific, computerized system to make historic inventory data available to each City department so that actions which might affect historic resources are evaluated appropriately and in a timely manner.

- *HR-1.E*: The City shall update the City's *Historic Preservation Ordinance* to reflect the requirements of the City's Certified Local Government status and current federal and state mandates and the policies of the General Plan.

Goal HR-2: To encourage owners of historic resources to preserve or upgrade historic properties by improving their economic viability.

Goal HR-5: To maintain historic neighborhoods that provide a diverse mix of housing types and services to meet the needs of families and build a sense of community.

Goal HR-6: To preserve important archaeological resources.

Policies

HR-6.1: The City shall enforce current federal and state and procedures for identifying, preserving and protecting prehistoric sites.

HR-6.2: The City shall require investigation during the planning process for all proposed developments in archaeologically sensitive areas in order to determine whether prehistoric resources may be affected by the project and, if so, require that appropriate mitigation measures be incorporated into the project design.

HR-6.3: Recognizing that Native American burials or archaeological artifacts may be encountered at unexpected locations, the City shall continue to enforce state mandates with its current mitigation requirement, applied to all development permits and tentative subdivision maps, that upon discovery of remains during construction, all activity will cease until qualified professional archaeological examination and reburial in an appropriate manner is accomplished.

Napa County

Historic and cultural resources are governed by the following policies established in the Napa County General Plan:

> *Policy CC-26*: Projects which follow the Secretary of the Interior's Standards for Preservation Projects shall be considered to have mitigated their impact on the historic resource.
>
> - *Action Item CC-23.2*: Impose the following conditions on all discretionary projects in areas which do not have a significant potential for containing archaeological or paleontological resources: "The Planning Department shall be notified immediately if any prehistoric, archaeologic, or paleontologic artifact is uncovered during construction. All construction must stop and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to evaluate the finds and recommend appropriate action." • "All construction must stop if any human remains are uncovered, and the County Coroner must be notified according to Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) shall be followed."

APPENDIX 3.13
Recreation

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to the recreational resources and the proposed project.

LGVSD

City of San Rafael General Plan

PR-1. Standards. Maintain, and where possible exceed, a recreation standard of three acres of park and recreation facilities per 1,000 residents.

> *PR-1a. Recreation standard*. Use the recreation standard when evaluating proposals for new parks. Consider the creation of neighborhood parks of less than three acres when it can be demonstrated that such a facility would satisfy an unmet neighborhood need, provide recreational value and be a sufficient size to support desired infrastructure.

P*R-7. Community Park Improvements*. Upgrade San Rafael's community parks to meet the recreational needs of the served population.

PR-8. Neighborhood Park Improvements. Upgrade San Rafael's neighborhood parks to meet the recreational needs of the served population.

> ***e. Peacock Gap Park*.** Update the Peacock Gap Park Master Plan as needed to improve trails and access to open space.

Marin Countywide Plan

Goal PK-1: A High-Quality Parks and Recreation System. Provide park and recreation facilities and programs to meet the various needs of all county residents

PK-1.c Support Local Agencies. Support park and recreation planning efforts by cities and towns, special districts, and other public agencies. Pursue assistance in formulating funding packages and obtaining funding; negotiate with school districts, developers, or other potential recreation providers for recreational opportunities.

Novato SD

City of Novato General Plan

PF Objective 2. Provide Community Facilities to Improve and Enhance Recreational and Cultural Opportunities.

PF Policy 3 Community Facilities. Continue efforts to provide various community facilities addressing recreational and cultural needs.

EN Objective 14. Provide an attractive and comprehensive system of parks and trails throughout the city to meet the recreational needs of the entire community.

EN Policy 44 Park and Recreation Facilities. Develop and maintain to the maximum extent possible given available resources a system of parks to meet the needs of Novato residents.

SVCSD

City of Sonoma General Plan

Goal CDE-6: Enhance Sonoma's "sense of place."

Policy 23: New development or redevelopment along Highway 12, including improvements in the right-of-way where appropriate, shall incorporate design features to improve pedestrian/bike access in conjunction with a consistent design theme.

Environmental Resources

Goal ERE-1: Acquire and protect important open space in and around Sonoma.

Goal ERE-4: Respond to the recreational needs of the community.

2.6 Preserve existing trees and plant new trees.

2.6.1. Develop amendments to the Tree Ordinance to further protect significant trees on private property.

2.6.2. Carry out the programs of the City Tree Planting Plan, including preserving existing trees through the Tree Ordinance and increasing canopy cover, streetscape trees, parking lot shading, and tree maintenance.

Goal ER-4: Respond to the recreational needs of the community. 4.2 Provide a minimum of 5 acres of open space and parkland per 1,000 city residents.

ER-4.2.1. Enforce the provisions of the Development Code to ensure that new development provides adequate and attractive public and private open space, while monitoring existing parkland maintenance needs.

Sonoma County General Plan

Objective OS-7.1: Provide for adequate parklands and trails primarily in locations that are convenient to urban areas to meet the outdoor recreation needs of the population, while not affecting agricultural uses.

OS-7g: Use the following guidelines to determine consistency of projects involving lands with abandoned railroad rights of way where reasonably related to the impacts of the project:

The project does not or will not preclude the use of the right-of-way for trails.

A width of 60 feet generally is reserved for trail purposes, unless the Regional Parks Department determines that a different width would be adequate.

An irrevocable offer of dedication for the right-of-way has been made to the County of Sonoma.

Napa SD

City of Napa General Plan

Goal PF1: To develop a system of well-maintained and fully improved local and citywide serving parks and recreation facilities which meet the needs of the residents of Napa.

PR-1.1: The City shall provide 12 acres of active and passive parkland per 1,000 residents. This total figure includes citywide, community, neighborhood, and other special park sites and recreational amenities incorporated into the public parks and recreational open space system.

PR-1.15: The City shall respect and plan for the protection of distinctive natural and historical resources and sensitive habitats within the parks and open space system through the use of appropriate site planning, design, and management strategies.

Goal PF 2: To provide an adequate and diverse source for developing and maintaining parks and recreational facilities.

Goal PF 3: To develop and maintain an open space and parks system which protects and reinforces the natural and historic character of the city and region, and which is consistent with conservation goals.

PR-3.11: The City shall address resource conservation in park development, operations and maintenance, especially with respect to water conservation.

PR-3.10: The City shall address conservation of sensitive natural and cultural resources in specific and detailed development and implementation plans for parks and trails; ensure compliance at all times with the California Environmental Quality Act (CEQA) and other regulatory requirements.

Napa County General Plan

Goal ROS-1: To ensure an extensive landscape of open spaces in which recreation, the protection of natural, cultural, and archaeological resources, agricultural production, and private property are mutually supportive and complementary.

Policy ROS-3: Recreational facilities and improvements on open space lands should be the minimum necessary to achieve recreation objectives and be limited in density, intensity,

need for public services, impacts on the natural environment, growth inducement, and impacts on neighboring properties.

Uses on open space lands shall respect the character of the surrounding area, require a minimum of public support services (such as paved roads, emergency services, or law enforcement); contain a minimum of paved surfaces, structures, natural landform alteration or other introduced or constructed features inconsistent with the environment; require minimal water usage, wildlife habitat removal and usage of herbicides and pesticides; be coordinated with neighbors in terms of integrated pest management procedures; and shall not contribute to the likelihood that additional nonagricultural uses of agricultural land will be proposed to support or be accessory to the continued existence of the recreational use.

APPENDIX 3.14
Aesthetics

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to the visual resources and the proposed project.

LGVSD

City of San Rafael

The City of San Rafael is characterized by scenic hills and valleys, the San Francisco Bay, the historic Downtown structures. The Mission San Rafael Arcangel, St. Rafael's Church, and many historic homes are notable structures that contribute a unique visual quality to the City. The identity of San Rafael is largely defined by visual aspects of the natural and built elements. Two major themes identified in the City of San Rafael General Plan address aesthetics and visual resources:

> **Improve the appearance of the neighborhoods** – San Rafael is a city of neighborhoods both residential and commercial, and new, attractive and graceful buildings that complement and enhance existing neighborhoods;
>
> **Treasure the open spaces** – Over the years, San Rafael residents have purchased and dedicated natural areas to save them as open space, resulting in surrounding hills that will remain natural backdrops to the community (City of San Rafael, 2020).

Following these themes, the Open Space Element and the Community Design Element of the City of San Rafael General Plan, 2020 (City of San Rafael, 2004??) govern the aesthetic resources of the city. These Elements address the qualities that form the City's larger visual character.

The City of San Rafael General Plan, Open Space Element goals that are related to scenic resources are as follows:

> **Goal 30-Protected Open Space:** It is the goal of San Rafael to preserve and protect open space and the natural environment for all to enjoy.
>
> - *OS-1. Open Space Preservation*. Preserve, through a variety of methods, the open space areas identified in the Inventory of Potential Open Space Sites (see Appendix I). Retain and protect open space areas that serve as delineators between neighborhoods and between adjacent communities, as wildlife habitat, and as visual assets for the community. Open space areas can also function as connections between

neighborhoods, for example with the creation of pathways in environmentally appropriate areas.

OS-1a. Open Space Inventory. Update the Inventory of Potential Open Space Sites. Identify and prioritize open space parcels for future protection. Maximize the use of available resources when assessing City involvement in securing open space by applying the following non-prioritized evaluation criteria:

b. Resource Areas and Aesthetics (visual backdrop or edge, unique site features, shorelines/ridgelines, wetlands, wildlife habitat including wildlife movement corridors and habitat for endangered species).

- *OS-6a. Utilities in Open Space*. Use zoning ordinance provisions and the design and environmental review processes to evaluate the location and design of public utilities.

It will be the responsibility of the Community Development Department to implement these goals through ongoing, long-term planning using resources like fees, staff time, and grants.

The City of San Rafael General Plan addresses visual resources in the Community Development Element. The Community Development Element consists of two mains sections: City Image and Design Quality, which provide direction regarding the preservation of views of hillsides and ridgelines, and provides design direction for future development. The Community Development Element identifies the need to enhance focal points like landmarks and areas of natural beauty, maintain boundary-marking gateways into the City, preserve views of San Rafael and San Pablo Bays, and improve the function and appearance of transportation corridors. The City of San Rafael General Plan, Community Development Element goals that are related to scenic resources are as follows:

Goal 7-A Beautiful City: It is the goal of the City of San Rafael to have its best natural and built features preserved and strengthened to enhance the attractiveness and livability of the City.

- *CD-1. City Image*. Reinforce the City's positive and distinctive image by recognizing the natural features of the City, protecting historic resources, and by strengthening the positive qualities of the City's focal points, gateways, corridors and neighborhoods.

- *CD-5. Views*. Respect and enhance to the greatest extent possible, views of the Bay and its islands, Bay wetlands, St. Raphael's church bell tower, Canalfront, marinas, Mt. Tamalpais, Marin Civic Center and hills and ridgelines from public streets, parks and publicly accessible pathways.

- *CD-5a. Views*. Improve access to and enhance views of the Canalfront. Develop a Canalfront design plan to address public access, view corridors and appropriate development standards for adjacent buildings.

- *CD-6. Hillsides and Bay*. Protect the visual identity of the hillsides and Bay by controlling development within hillside areas, providing setbacks from the Bay, and providing public access along the Bay edge.

- *CD-8.Gateways*. Provide and maintain distinctive gateways to identify City entryways.

  CD-8a. Gateways. Evaluate each of the gateways defined on the design element maps to determine what natural, architectural, signage or landscape treatments should further establish these locations as identifiable gateways within the City, and implement the desired improvements as part of the City's Capital Improvement program.

- *CD-9. Transportation Corridors*. To improve the function and appearance of corridors, recognize those shown on Exhibits 17 and 18 and define each corridor's contribution to the City based upon its land use and transportation function and how it is experienced by the public.

  CD-9a. Corridor Design Guidelines. Develop specific design guidelines for each corridor that address building massing, articulation of building facades, detailing, lighting, landscaping, street trees and other desired infrastructure and characteristics. Include appropriate zoning code provisions.

  CD-9b. Right-of-Way Landscaping. Encourage Caltrans to install and maintain landscaping along its right-of-ways.

- *CD-10a. Visual Compatibility*. Ensure that new structures are visually compatible with the neighborhood and encourage neighborhood gathering places. Guidelines may address screening of service functions, materials and detailing, screening of roof equipment, lighting, landscaping, outdoor café seating and pedestrian amenities.

Unincorporated Marin County

The Community Design Element of the Marin Countywide Plan (General Plan) governs the aesthetic resources within the county and defines goals, policies, and programs to address visual resource issues (Marin Countywide Plan, 2007). The Countywide Plan recognizes the need to protect visual resources, from both the natural and built environment, in order to define neighborhoods, towns, and regions. Visual qualities of buildings, streets, and views contribute to the look and feel of the region. The Countywide Plan incorporates environmental, economic, and equitable considerations when developing polices and implementing programs that address visual resources.

Goal DES-4: Protection of Scenic Resources. Minimize visual impacts of development and preserve vistas of important natural features.

- *Policy DES-4.:1 Preserve Visual Quality*. Protect scenic quality and views of the natural environment — including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.

  Program DES-4.a Protect Key Public Views. Work with community groups to identify, map, and protect important view corridors. Establish design standards for development in these areas as part of the design review requirements and individual community plans.

Program DES-4.b Minimize Visual Impacts of Public Facilities. Amend applicable codes and procedures to require appropriate placement, design, setbacks, and native landscaping of public facilities (including soundwalls, medians, retaining walls, power lines, and water tanks) to reduce visual impacts, and encourage local agencies to adopt similar standards.

Program DES-4.c Regulate Mass and Scale. Ensure that the mass and scale of new structures respect environmental site constraints and character of the surrounding neighborhood, are compatible with ridge protection policies, and avoid tree-cutting (especially on wooded hillsides) and grading wherever possible. Community plans should consider regulations concerning home size.

Program DES-4.d Protect Views of Ridgelines. Implement Development Code standards that require development proposed on or near visually prominent ridgelines (including in the Ridge and Upland Greenbelt Areas shown on Map 3-4) to be clustered below the ridgeline on the least visually prominent portion of the site. Expand the implementation of these standards by including in the Ridge and Upland Greenbelt Area those unmapped ridgelines identified as having countywide significance and rezoning Ridge and Upland Greenbelt lands to Planned District categories and adjacent buffer area to a transitional district.

Program DES-4.e Protect Views of Ridge and Upland Greenbelt Areas. Employ a variety of strategies to protect views of Ridge and Upland Greenbelt areas, including the following:

1. Identifying any unmapped ridgelines of countywide significance, both developed and undeveloped, and adjusting the Ridge and Upland Greenbelt Areas map as appropriate;

2. Amending the Development Code and County zoning maps to designate a suburban edge on all parcels contiguous to the City- Centered Corridor that abut the Ridge and Upland Greenbelt, and requiring that those parcels develop at rural densities with visually sensitive site design;

3. Rezoning Ridge and Upland Greenbelt lands to the Planned District category and adjacent buffer areas to a transitional district, thereby subjecting them to County Design Review Requirements that include hillside protection;

4. Requiring buildings in Ridge and Upland Greenbelt areas to be screened from view by wooded areas, rock outcrops, or topographical features; and

5. Calculating density for Ridge and Upland Greenbelt subdivisions at the lowest end of the General Plan designation range.

6. DES-4.f Consider Participation in the California Scenic Highway Program. Consider participation in the Scenic Highway Program in order to preserve and enhance Marin’s scenic highway corridors.

7. Attractive and Functional Streets and Parking Areas. Design automobile use areas to fit the character of the community, and comfortably

accommodate travel by pedestrians and bicyclists, while still meeting health, safety, and emergency access needs (see Figure 3-8).

- *Policy DES-5.1 Achieve Streetscape Compatibility*. Ensure that roadways, parking areas, and pedestrian and bike movement are functionally and aesthetically appropriate to the areas they serve.

The Marin Countywide Plan also recognizes the importance of the historical and agricultural legacies of the St. Vincent's and Silveira area, which consists of approximately 1,110 acres east of Highway 101 in the unincorporated area of the County between the cities of San Rafael and Novato. Two properties: the 770-acre Catholic Youth Organization/St. Vincent's School for Boys and the 340-acre Silveira Family ranch are important land uses in the county. The school building is a California historical landmark and is partly visible from Highway 101. Each property represents a distinct legacy in the history of Marin County (Countywide Plan, 2007). The level of development in this area is limited under the 1973 Marin Countywide Plan, which included the St. Vincent's and Silveira lands within the eastern City-Centered Corridor as an urban reserve area. If this area is annexed into the City of San Rafael, the City could increase development rates. According to the 2007 Marin Countywide Plan, the 1994 Marin Countywide Plan "presumed annexation of these two parcels to, and development within, the City of San Rafael. In 2003 the City Council of San Rafael decided not to annex the properties and submitted a request to the Local Agency Formation Commission (LAFCO) to remove these lands from the City's Sphere of Influence. In June 2006, LAFCO removed the properties from San Rafael's sphere of influence. Since LAFCO approved this request from the City of San Rafael, these parcels remain in the unincorporated area of the County" (Marin Countywide Plan, 2007). This area is an integral part of the character of the region and holds special significance for Marin County for many reasons, particularly visual and aesthetic appearance of the buildings and surrounding area, and the area's importance as a physical and visual separator between the cities of Novato and San Rafael, and two policies have been defined in the Countywide Plan:

- *Policy SV-1.5 Protect the Silveira Corridor*. Protect the Silveira Corridor on the Silveira ranch to provide for scenic vistas and to retain the natural ecological connections among grasslands, valley oaks, the Miller Creek riparian corridor, and diked tideland habitats.

- *Policy SV-3.2 Protect Existing Views*. Development shall not negatively impact existing views of Pacheco Ridge, the Chapel, the bucolic setting, and the bay as seen from Highway 101. The properties shall continue to function as a visual buffer separating the cities of San Rafael and Novato.

Novato SD

City of Novato

The Community Identity Element governs the aesthetic resources of the City of Novato.

> **Goal: Retain and promote the small town character** of Novato including preservation of the historic features and landmarks.

- *CI Policy 9: Undergrounding Utilities*. Continue to require undergrounding of utilities.

- *CI Policy 10*. Provide for the proper placement, removal and replacement of above-ground utilities.

- *CI Program 10.1*. Work with utility companies to remove inactive or abandoned above ground utility lines and facilities.

- *CI Program 10.2*. Explore funding programs to facilitate the undergrounding of utilities in addition to current methods.

- *CI Program 10.3*. Consider amending the zoning ordinance to incorporate guidelines or regulations, to the extent feasible, regarding the aesthetics, proliferation and location of above ground utilities, appurtenance and antennas.

Other policies in the Community Identity Element encourage landscaping, variety in design and pattern, and also the development of entryways through the use of signs, street lighting, and street trees.

Unincorporated Marin County

See the Unincorporated Marin County discussion above for relevant plans and policies that apply to unincorporated areas surrounding the City of Novato. Novato is a member of the Marin Countywide Planning Agency, which consists of representatives of the 11 cities and the County. Based on Agency review, the Marin Countywide Plan, which designates land use and densities for the unincorporated areas adjacent to Novato: Bel Marin Keys, Black Point, North Novato, Indian Valley, Southwest Novato, and Loma Verde, is generally consistent with the policies developed under the City of Novato General Plan. Major discrepancies between the plans are associated with uses and densities around the undeveloped portion of Bel Marin Keys.

SVCSD

City of Sonoma

The Community Development Element's Development Code and the Environmental Resources Element in the *City of Napa General Plan: 2020* govern the aesthetics resources in the City. The Community Development Element describes development patterns and the visual character of the city and its neighborhoods, while the Environmental Resources Element identifies open space and hillsides, and establishes policies for protecting and enhancing these areas. There are two major objectives that address aesthetic resources in the Community Development Element:

- Establishing an attractive, thriving commercial area at the southern gateway to Sonoma; and

- Upgrading the appearance of the Sonoma Highway commercial corridor.

The Community Development Element establishes goals, policies, and programs to achieve these objectives through the Development Code. The Development Code contains standards and

provisions to conserve and protect the city's natural beauty, including scenic views, hillside open space, creeks, and trees, and ensure that new development is compatible with Sonoma's unique character and contributes to its quality of life, through:

Goal CD-5: Reinforce the historic, small-town characteristics that give Sonoma its unique sense of place.

- *Policy CD-5.3*. Protect important scenic vistas and natural resources, and incorporate significant views and natural features into project designs. (SEE MEASURE 4.1.1)
- *Policy CD-5.5*. Promote higher infill development, while ensuring that building mass, scale and form are compatible with neighborhood and town character.
- *Policy CD-5.6*. Pursue design consistency, improved pedestrian and bicycle access, and right-of-way beautification along the Highway 12 corridor.
- *Implementation Measure 5.6.2*. Extend right-of-way, landscaping, and streetscape improvements along Broadway and south of MacArthur Street
- *Policy CD-5.7*. Develop and implement design improvements that highlight the primary gateways to Sonoma.
- *Implementation Measure 5.7.1*. Install and upgrade landscaping, signs, monuments, and streetscape improvements to clearly mark Sonoma's gateways at : Four Corners, West Napa Street/ Sonoma Highway, Fifth Street East/ Napa Road, Fifth Street West/ Leveroni Road, and Sonoma Highway/ Verano Avenue.

The General Plan integrates different Elements to achieve the objectives. For example, in conjunction with the Community Development Element, the Circulation Element includes a policy that requires implementation of the historic grid system for new development, which will effectively shape the visual character of new construction, both commercial and residential, as well as its compatibility with existing development and neighborhoods. Also, policies and implementation measures in the Environmental Resources Element establish standards for conserving open space and incorporating landscaping for individual projects. The Environmental Resource Element also provides guidance for implementing land use designations. The goals and policies in the Environmental Resources Element that relate to aesthetics are as follows:

Goal ER-1: Acquire and protect important open space in and around Sonoma.

- *Policy ER-1.1*. Maintain the greenbelt surrounding he city.
- *Policy ER-1.2*. Base open space dedication and acquisition decisions on creating a network of public and private spaces that reflects the significant natural and cultural characteristics of Sonoma.
- *Policy ER-1.4*. Require new development to provide adequate private land, and where appropriate, public open space.
- *Policy ER- 2.6*. Preserve existing trees and plant new trees.

Sonoma County

The Open Space Element and Land Use Element of the *Sonoma County General Plan* (Sonoma County, 1998) govern the visual and aesthetic resources of the county. The Open Space Element identifies three categories of scenic resources: community separators, scenic landscape units, and scenic highway corridors. The General Plan goals related to scenic resources are as follows:

> **Goal OS-1:** Preserve the visual identities of communities by maintaining open space areas between cities and communities.
>
> - *Community separators* are open spaces or rural areas that separate the discrete, identifiable cities and communities of Sonoma County. Community separators provide visual relief from continuous urbanization and lead to the avoidance of corridor-style urbanization. In Sonoma County, community separators include major open space features such as the Sonoma Mountains and Sonoma Creek, and agricultural fields, valley floors, and vineyards. The Sonoma County General Plan identifies eight areas as community separators.
>
> **Goal OS-2:** Retain the largely open, scenic character of important scenic landscape units.
>
> - *Scenic landscape units* are areas that are open, provide important visual relief from urban densities, and have little capacity to absorb very much development without significant visual impact.
>
> **Goal OS-3:** Identify and preserve roadside landscapes which have a high visual quality as they contribute to the living environment of local residents and to the county's tourism economy.
>
> - *Scenic highway corridors* are rural roads from which the community, as well as tourists, can view the variety and beauty of the many landscapes of Sonoma County, including orchards, forest covered hills, rolling dairy lands, scenic valleys, and vineyards. City of Sonoma General Plan

The City of Sonoma General Plan governs the visual and aesthetic resources of the city (City of Sonoma, 1995). The Community Development Element includes the following goal and policy for protecting aesthetic resources:

> **Goal CDE-6:** Enhance Sonoma's "sense of place."
>
> - *Policy 20*. Important scenic vistas shall be protected.

Napa SD

City of Napa

The *City of Napa General Plan* Land Use Element governs aesthetic resources in the Napa.

> **Goal LU-1:** To maintain and enhance Napa's small town qualities and unique community identity.

- *Policy LU-1.1*. The City shall maintain the Rural Urban Limit (RUL) and Greenbelt designation to define the extent of urban development through the year 2020 and to provide for the maintenance of the city's surrounding open space/agriculture to separate Napa from other communities.

- *Policy LU-1.4*. The City shall recognize the importance of historic properties, districts, and aesthetic resources as contributors to the city's identity.

- *Policy LU-1.5*. The City shall refine the locations and concept of the key gateways to the city identified in Figure 1-3, and shall establish gateway and scenic corridor design guidelines for both public and private development to ensure attractive entrances to the city. Greenways, open space, riparian corridors, wetland areas and agricultural land shall be considered as important components when they exist in gateway locations.

- *Policy LU-1.6*. The City shall designate SR 29, SR 121, and SR 221 as scenic corridors. The City shall endeavor to improve the scenic character of these roads through undergrounding of utilities, increased landscaping, street tree planting, and other improvements.

- *Policy LU-1.7*. The City shall enhance the Napa River as a natural corridor and recreational spine connecting neighborhoods, employment areas, and other destinations.

- *Program LU-1.A*. The City shall initiate further study to: 1) define gateway locations, with consideration to the importance of all entrances to the city; and, 2) prepare and adopt gateway design guidelines for private and public development at the key gateway and scenic locations.

  Program LU-1.B. The City shall revise the Zoning Ordinance to include a Scenic Corridor Overlay Zone to apply to the scenic corridors identified in Policy LU-1.5.

  Program LU-1.C. The City shall identify other major streets in the City which are important to the city's character, history, and identity (e.g., Soscol Avenue) and establish corridor streetscape design guidelines that will address adjacent land uses, signage, landscaping, street tree planting, and placement of public parking along these designated corridors.

- *Policy PR-7.10*. The City shall design and construct public improvements that will enhance the aesthetics of pedestrian access to cultural districts.

Napa County

The Land Use Element and Community Character Element in the *Napa County General Plan* govern aesthetics in the unincorporated areas of Napa County. The following goals and policies appear in the Community Character Element and Land Use Elements

Goal CC-1: Preserve, improve, and provide visual access to the beauty of Napa County.

Goal CC-2: Continue to promote the diverse beauty of the entire county for the benefit of residents, businesses, and visitors.

Goal CC-3: Recognize the role of the arts in contributing to the quality of life and the attractiveness of Napa County.

- *Policy CC-1*. The County will retain the character and natural beauty of Napa County through the preservation of open space.

- *Policy CC-2*. New wineries and other uses requiring the issuance of a Use Permit should be designed to convey their permanence and attractiveness.

- *Policy CC-3*. Signs shall be used primarily to provide necessary information and business identification rather than the advertisement of goods and services. Sign size limits and locational requirements shall be established to avoid over-proliferation of signs. Although the sign size may be limited, lettering should be large and easy to read.

- *Policy CC-4*. Consistent with current regulations regarding road setbacks and fences, the County shall preserve the existing significant natural features by requiring all development to retain the visually open, rural character of the County and by allowing solid sound walls only in unique circumstances and where acceptable noise levels are exceeded.

- *Policy CC-5*. When approving the conversion of existing forested land to vineyards or nonagricultural activity, the County shall require the retention of trees in strategic locations to preserve the forested appearance of the site as seen from public roadways.

- *Policy CC-6*. The grading of building sites, vineyards, and other uses shall incorporate techniques to retain as much as possible a natural landform appearance. Examples include:

    - The overall shape, height, and grade of any cut or fill slope shall be designed to simulate the existing natural contours and scale of the natural terrain of the site.
    - The angle of the graded slope shall be gradually adjusted to the angle of the natural terrain.
    - Sharp, angular forms shall be rounded and smoothed to blend with the natural terrain.

- *Policy CC-7*. The County seeks to strengthen the arts community and encourages incorporation of art into the design of new public buildings.

- *Policy CC-8*. Scenic roadways which shall be subject to the Viewshed Protection Program are those shown in Figure CC-3, or designated by the Board of Supervisors in the future.

- *Policy CC-9*. The County may consider pursuing formal scenic highway designation by the State of California for some roadways, provided that in each case the benefits of the designation are found to outweigh any costs.

- *Policy CC-10*. Consistent with the County's Viewshed Protection Program, new developments in hillside areas should be designed to minimize their visibility from the County's scenic roadways and discourage new encroachments on natural ridgelines. The County shall continue implementation of the Viewshed Protection

Program and shall apply the protective provisions of the program to all public projects.

- *Policy CC-11*. The County will work with the City of American Canyon to explore the possibility of jointly developing a Scenic Highway 29 Corridor plan within our respective jurisdictions to develop the Highway 29 Corridor in a comprehensive and aesthetically pleasing manner.

- *Policy CC-12*. Development projects on County-owned sites within the incorporated cities/town shall be designed to be visually compatible with their surroundings in terms of use, scale, and materials.

- *Policy CC-13*. The County's roadway construction and maintenance standards and other practices shall be designed to enhance the attractiveness of all roadways and in particular scenic roadways. New roadway construction or expansion shall retain the current landscape characteristics of County-designated scenic roadways, including retention of existing trees to the maximum extent feasible and required re-vegetation and re-contouring of disturbed areas. In addition:

- *Policy CC-14*. To the extent allowed by law, telecommunications facilities and transmission lines shall not be located within view of any scenic roadway unless they are sited and designed so as to be virtually invisible to the naked eye from the roadway, are designed to appear as a natural feature of the environment and do not block views or disrupt scenic vistas, or are so well architecturally-integrated into an existing building as to effectively be unnoticeable.

- *Policy CC-15*. The County opposes the construction of any new billboards and supports the removal of existing billboards.

- *Policy CC-16*. Adjacent to scenic roadways, utilities shall be placed underground where possible.

- *Policy AG/LU-94*. Sites designated as Study Area on the Land Use Map are urbanized sites adjacent to the City of Napa that shall be considered for revitalization and reuse by a mix of uses via site-specific planning. Site planning shall consider the availability and cost of urban services, opportunities for public access and recreation, impacts and benefits to Napa County and the City of Napa, and the potential for future annexation to the City.

  Action Item AG/LU-94.1: The County shall adopt development standards for the Pacific Coast/Boca and Napa Pipe sites which shall include, but may not be limited to, buffering and visual screening from existing industrial uses and Syar Quarry, design features that include physical buffers (e.g., vegetation, landscape features, or walls in unique circumstances), building placement and orientation in a manner that physically separates these sites from incompatible operations of adjacent uses.

- Policy AG/LU-117: The County shall seek to be involved to the maximum extent possible in the decisions of local, state, federal, and other agencies regarding the location of energy generation facilities, electrical transmission lines, communications towers, water tanks, or other facilities with the potential to negatively affect the visual character of the county.

- *Policy AG/LU-21*. The following standards shall apply to lands designated as Agricultural Resource on the Land Use Map of this General Plan.

- *Policy AG/LU-74*. Notwithstanding AG/LU-25, the County supports the extension of recycled water to the Coombsville area to reduce reliance on groundwater in the Milliken-Sarco-Tulocay(MST) area.

APPENDIX 3.15
Environmental Justice

A discussion of local, state and federal plans and policies that pertain to recreation in the NSP study area are presented in Appendix 3.13.

APPENDIX 3.16
Socioeconomics

Local

This section lists the goals and policies in the general plans for the cities and counties in the project area that could apply to socioeconomics and the proposed project.

LGVSD and Novato SD

The City of Novato, City of San Rafael, and Marin County general plans do not identify goals, policies, and implementation measures related to the social or economic effects of the proposed project.

SVCSD

The *Sonoma County General Plan 2020* update is in draft form and does not include an economic element, but does have draft policies to preserve agricultural land in Sonoma County (Sonoma County, 2008b). The *City of Sonoma General Plan* (2006) identifies the following goal and policies related to economic and social effects:

> *Goal LE-1*: Support and enhance the local economy in a manner consistent with Sonoma's character and in furtherance of its quality of life.
>
> *Policy 1.1*: Focus on the retention and attraction of businesses that reinforce Sonoma's distinctive qualities – such as agriculture, food and wine, history, and art – and that offer high paying jobs.
>
> *Policy 1.3*: Support efforts by the County and other organizations to ensure long-term viability of the agricultural economy in Sonoma Valley, including by preventing urban development from encroaching into agricultural areas.
>
> *Policy 1.4*: Encourage continued production of agricultural commodities within the city and local-serving agricultural marketing opportunities.

Napa SD

The Napa County General Plan (2008b) identifies the following goal and policies related to economic and social effects:

> *Goal E-1*: Maintain and enhance the economic viability of agriculture in Napa County.

> *Policy E-1*: The County's economic development will focus on ensuring the continued viability of agriculture in Napa County and is an important part of the County's economy, generating jobs, local spending and tax revenues.
>
> *Policy E-4*: The County will work with governmental and non-governmental groups – including chambers of commerce, industry associations, the cities and town, and economic development organizations – to maintain the economic viability of agriculture and improve the economic vitality of all of Napa County.

The *City of Napa General Plan* does not identify goals, policies, and implementation measures related to the social or economic effects of the proposed project.

APPENDIX 8A
EIR/EIS Distribution List

The public distribution of the North Bay Water Recycling Program Draft EIR/EIS emphasizes the use of electronic media to ensure cost-effective, broad availability to the public and interested parties. The Draft EIR/EIS is available on the Internet at the North Bay Water Reuse Authority (NBWRA) project website, www.nbwra.org. The Draft EIR/EIS is also available for review at the locations listed below.

All persons, agencies, and organizations listed in this chapter will be informed of the availability of and locations to obtain the Draft EIR/EIS, as well as the timing of the 45-day public/agency comment period. Parties listed below will receive either the full Draft EIR/EIS and an electronic copy of the executive summary and an electronic copy of the Draft EIR/EIS and appendices.

Document Availability

Copies of the Draft EIR/EIS are available for public review at the following locations:

Las Gallinas Valley Sanitary District
300 Smith Ranch Road
San Rafael, CA 94903

Novato Sanitary District
500 Davidson Street
Novato, California 94945

Napa Sanitation District
935 Hartle Court
Napa, CA 94559

Sonoma County Water Agency
404 Aviation Avenue
Santa Rosa, CA 95403

Sonoma County Central Library
211 E. Street
Santa Rosa, CA 95404

Napa City-County Library
580Coombs Street
Napa, CA 94559

Marin County-Novato Branch Library
1720 Novato Boulevard
Novato, CA 94947

Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

Marin County-Central Branch Library
3501 Civic Center Drive #427
San Rafael, CA 94903

Sonoma Valley Regional Library
775 West Napa St.
Sonoma, CA 95476

Agencies and Organizations Receiving Copies of the Draft EIR/EIS are listed below. A notice of availability of the Draft EIR/EIS will be sent to additional individuals and interested parties.

Federal and State Agencies

California Department of Fish and Game
California Department of Health (Drinking Water Field Operations Branch)
California Department of Parks and Recreation
California Department of Parks and Recreation (Delta Vista District)
California Department of Parks and Recreation (Natural Resources)
California Department of Planning and Research (Planning Unit)
California Department of Transportation (Transportation Planning)
California Department of Transportation (right of way department)
California Department of Water Resources (Central District)
California Department of Water Resources (Recycled Water Task Force)
California Department of Water Resources (Statewide Water Planning)
California Farm Bureau Federation (Natural Resources)
California Environmental Protection Agency
California Office of Historic Preservation
California Regional Water Quality Control Board (Region 2)
California State Water Resources Control Board (Financial Assistance, office of water recycling)
Federal Aviation Administration (Western-Pacific Region)
National Marine Fisheries Service (Central Valley Area and Southwest Division)
Office of Planning and Research, State Clearinghouse
U.S. Army Corps of Engineers (Regulatory Functions Branch)
U.S. Fish and Wildlife Service (Sacramento Office)
U.S. Environmental Protection Agency
U.S. Geological Survey (Water Resources Division)

Regional/Local Entities

Bay Area Air Quality Management District
Bay of Conservation and Development Commission (BCDC)
City of Novato
City of Novato Public Works
City of Napa (community development; city manager; public works)
City of Novato (City Manager)
City of Petaluma (public works, city manager, community development)
City of Rohnert Park (city manager, community development, public works)
City of Santa Rosa (city manager, community development, public works)
City of San Rafael (city Manager)
City of San Rafael Library
City of San Rafael planning department; public works
City of Sonoma (public works)
County of Napa (public works; planning dept)

County of Sonoma
Hamilton Park Homeowners Association
Las Gallinas Valley Sanitary District
Los Carneros Water District
Napa County Farm Bureau
Napa Valley Country Club
Napa County Clerk
Napa County Fire Department
Napa County Library
Novato Unified School District
Marin County Fire Department
Marin County Clerk
Marin County Public Works
Marin Audubon Society
Marin Municipal Water District
Marin County
San Francisco Bay Regional Water Quality Board (San Francisco Bay Region)
Sonoma County Clerks Office
Sonoma County Department of Health Services (Environmental Health Division)
Sonoma County Library
Sonoma Valley Regional Library
Sonoma County Permit and Resource Management Department
Sonoma County Regional Parks
Sonoma County Transportation and Public Works
Sonoma Valley Resource Conservation District
Sonoma County Fire Department
Sonoma County Conservation Action
Sonoma County Farm Bureau
Sonoma County PRMD
Sustainable Agriculture Coalition
Sonoma County Water Agency
Valley of the Moon Water District

Other Interested Parties

Friends of Novato Creek
Save the Bay
San Francisco Estuary Institute
Sierra Club Marin Group
Spawn
G.U.L.P.
Friends of the Napa River
Congress Valley Water District
Carneros Quality Alliance

Greenbelt Alliance
Friends of the Eel Rivers (David Keller)
Coastal Conservancy
Audubon California
Bay Institute
Greenbelt Alliance
Owl Foundation
Petaluma River Keepers
Russian River Keepers
Russian River Watershed Protection Committee
Sierra Club
Physicians for Recycled Water
Planning of Conservation League