The City of Novato (City), as lead agency, determined that the proposed Housing Element Update (Housing Element or proposed project) is a "project" within the definition of the California Environmental Quality Act (CEQA). CEQA requires the preparation of an Environmental Impact Report (EIR) prior to the approval of any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378(a)).

This Draft EIR has been prepared to evaluate the environmental impacts associated with implementation of the Housing Element. This section provides a summary of the proposed project, describes the purpose and intended uses of the EIR, describes the EIR process, provides an overview of the contents of this Draft EIR, and identifies effects found to not be significant.

1.1 SUMMARY OF THE PROPOSED PROJECT

The proposed project would:

1) Amend the City of Novato General Plan (General Plan) to update the Housing Element, and

2) Implement the Housing Element's housing programs, including:

- Program 9.B (Implement Actions and Incentives to Address Remaining Lower Income Housing Need). Amend the General Plan Land Use Map and text, the Downtown Novato Specific Plan land use map and text, and Zoning Code text and map to implement Program 9.B (Affordable Housing), including application of the Affordable Housing Overlay (AHO) overlay zone on Sites 1 through 5 (See Section 2.0, Program 9.B for a description of these sites);

- Program 9.E (Adopt State-Mandated Density Bonus Ordinance and Local Density Bonus for Senior Housing). Amend the Zoning Code text to implement Program 9.E by adoption of an ordinance incorporating the state density bonus provisions and adding a local senior affordable housing density bonus; and

- Program 12.A (Adopt an Emergency Shelter Ordinance). Amend the Hamilton/Ignacio Industrial Park Master Plan and Precise Development Plan to implement Program 12.A to allow emergency shelters as a principally permitted use subject to specific development and use standards.

1.2 PURPOSE AND INTENDED USES OF THE EIR

This Draft EIR has been prepared in compliance with the requirements of CEQA (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An EIR must disclose the expected environmental impacts of a project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts.

The Housing Element is a component of the City's General Plan and the programs contained therein, including the General Plan, Downtown Specific Plan, and Zoning Ordinance amendments described herein, are implementation measures of the Housing Element. The Environmental Impact Report (EIR)is intended to serve as a programmatic tiering document for the purposes of CEQA as allowed under Sections 15152, 15168 and 15183 of the CEQA Guidelines. A tiering document front-loads the analysis needed for many projects in order to decrease the time and money that would be needed for individual analyses for each subsequent project.

The City, as the lead agency, has prepared this EIR to provide decision-makers, the public, responsible agencies, and trustee agencies with an objective analysis of the potential environmental impacts resulting from adoption of the Project and subsequent implementation of projects consistent with the Project. The environmental review process enables interested parties to evaluate the Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the Project. While CEQA requires public agencies to consider, and where feasible, minimize environmental impacts of a proposed project, CEQA also requires the lead agency to balance adverse environmental effects against other public objectives, including the economic, environmental, and social benefits of a project, in determining whether a project should be approved.

This EIR will be used by the City as a tool in evaluating the environmental impacts of the Project. Please see Chapter 2.0, Project Description, for a description of approvals and subsequent actions associated with the Project.

As the Lead Agency under the provisions of CEQA, the City has discretionary approval authority and the responsibility to consider the environmental effects of the Project. This EIR, in accordance with CEQA Guidelines Section 15126, will serve as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the Project. The City will consider the Draft EIR, comments received on the Draft EIR, and responses to those comments before making a decision regarding the proposed project.

1.3 TYPE OF EIR

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Program EIR pursuant to CEQA Guidelines Section 15168, which states:

"A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

1. *Geographically,*
2. *As logical parts in the chain of contemplated actions,*
3. *In connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or*

4. *As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways."*

The program-level analysis considers the broad environmental effects of the proposed project. This EIR will be used to evaluate subsequent projects and activities under the proposed project. This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering approval of the proposed project. Additional environmental review under CEQA may be required for subsequent projects and would be generally based on the subsequent project's consistency with the proposed project and the analysis in this EIR, as required under CEQA. It may be determined that some future projects or activities under the proposed project may be exempt from environmental review. When subsequent projects or activities under the proposed project are proposed, the City will examine the projects or activities to determine whether their effects were adequately analyzed in the Program EIR (CEQA Guidelines Section 15168(c)). If the projects or activities would have no effects beyond those disclosed in this EIR, no further CEQA compliance would be required.

1.4 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

The term "responsible agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the Project or an aspect of the Project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "trustee agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). The Housing Element will be submitted to the State Housing and Community Development Department for review and certification. No other responsible agencies or trustee agencies are responsible for approvals associated with adoption of the proposed project or other actions to support implementation of the proposed project.

1.5 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for this EIR has involved, or will involve, the following general procedural steps:

NOTICE OF PREPARATION

The City circulated a Notice of Preparation (NOP) of an EIR for the Housing Element on March 22, 2013 to the State Clearinghouse, public agencies, organizations, and the public. A public scoping meeting was held on April 1, 2013 to provide an overview of the proposed project and to receive comments from interested agencies, organizations, and members of the public regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The NOP and comments provided by interested parties in response to the NOP are presented in Appendix A.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the proposed project, description of the environmental setting, identification of the project's direct and indirect

impacts on the environment, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City will file the Notice of Completion (NOC) with the State Clearinghouse to begin the public review period.

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. All comments or questions regarding the Draft EIR should be addressed to:

Steve Marshall, Principal Planner
City of Novato Community Development Department
75 Rowland Way, #110
Novato, CA 94945

Phone: (415)899-8942
Fax: (415)899-8217
Email: smarshall@novato.org

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete", the City Council may certify the Final EIR in accordance with CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed project that intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the project. A decision to approve the proposed project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Section 15091 and if applicable, 15093. A Mitigation Monitoring Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring Program will be designed to ensure that these measures are carried out during project implementation, in a manner that is consistent with the Final EIR.

1.6 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City and responses to the NOP.

This Draft EIR is organized in the following manner:

EXECUTIVE SUMMARY

The Executive Summary summarizes the characteristics of the proposed project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed project.

CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the proposed project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and summarizes comments received on the NOP.

CHAPTER 2.0 – PROJECT DESCRIPTION

Chapter 2.0 provides a detailed description of the proposed project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent projects and activities, and a list of related agency action requirements.

CHAPTER 3.0 - ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

Environmental Setting. A description of the existing environment as it pertains to the topical area.

Regulatory Setting. A description of the regulatory environment that may be applicable to the proposed project.

Impacts and Mitigation Measures. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this section:

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

CHAPTER 4.0 – OTHER CEQA-REQUIRED TOPICS

Chapter 4.0 evaluates and describes the following CEQA required topics: impacts considered less-than-significant, significant and irreversible impacts, growth-inducing effects, cumulative, and significant and unavoidable environmental effects.

CHAPTER 5.0 - ALTERNATIVES TO THE PROJECT

Chapter 5.0 provides a comparative analysis between the merits of the proposed project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the Project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the proposed project.

CHAPTER 6 - REPORT PREPARERS

Chapter 6.0 lists all authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

APPENDICES

This section includes all notices and other procedural documents pertinent to the Draft EIR, as well as technical material prepared to support the analysis.

1.7 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City received six written comment letters in response to the NOP and oral comments at the scoping meeting. The comment letters are provided in Appendix A of this Draft EIR and the comments received in response to the NOP are summarized below.

- General concerns related to commute patterns, greenhouse gas emissions, and air quality, including effect of location of each site relative to the proximity of public transit.
- General concerns related to adequacy of water supply to accommodate the affordable housing units.
- Site 2 - Landing Court.
    - Accessing site from Clausing Avenue, including emergency access, could result in increased emergency response time and endanger residents.
    - Noise.
    - Construction-related air quality issues.

- Public safety.
- Aesthetic issues related to lighting and building heights.
- Traffic and pedestrian safety.
- Parking demand.

- Site 3 – Redwood Drive.
  - Potential hazards associated with the PG&E natural gas transmission lines through the property. Address recent testing results and any required setbacks.
  - Drainage and flooding issues.
  - Landslide concerns.
  - Traffic.
  - Lack of public transportation.
  - Wetlands.
  - Noise and light pollution.
  - Wildlife distribution or elimination.
  - Views from owners on Cobblestone.
  - Slope stability and landslide potential.
  - Health impacts related to diesel exhaust and other freeway-related pollution exposure.
  - CO2 emissions related to lack of public transportation.
  - Aesthetics.
  - SMART train safety risk.
  - Potential archaeological resources.

- Wood Hollow Road/Redwood Boulevard Alternative Site.
  - Same concerns as listed for Site 3.
  - Traffic safety.

- Alternatives.
  - Consider vacant land adjacent to Quest church, the Sloat Nursery site, and three acres of the Junior High Site in San Marin.
  - Consider impact of increasing the minimum percentage of affordable units from 20% to 35%.

1.8 TERMINOLOGY USED IN THIS EIR

This Draft EIR uses the following terminology, as described in Article 20 of the State CEQA Guidelines:

"Project" means the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

"Environment" means the physical conditions that exist within the area which will be affected by a proposed project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved shall be the area in which significant effects would occur either directly or indirectly as a result of the project. The "environment" includes both natural and man-made conditions.

"Effects" and "impacts" as used in this document are synonymous. Effects analyzed under CEQA must be related to a physical change. Effects include:

- direct or primary effects that are caused by the project and occur at the same time and place, and
- indirect or secondary effects that are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

"Mitigation" includes:

- avoiding the impact altogether by not taking a certain action or parts of an action;
- minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
- reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
- compensating for the impact by replacing or providing substitute resources or environments.

"Cumulative impacts" refers to two or more individual effects that, when considered together, are

- considerable or which compound or increase other environmental impacts:
- The individual effects may be changes resulting from a single project or a number of separate projects.

– The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

This Draft EIR uses a variety of terms to describe the level of significance of environmental impacts identified during the course of the environmental analysis. These terms are defined below.

- A "less-than-significant impact" is an impact that is adverse but that does not exceed the defined standards of significance. Less-than-significant impacts do not require mitigation.
- A "potentially significant impact" is an impact for which there is not enough information to make a finding of less-than-significant impact; however, for the purpose of this Draft EIR, the impact is considered significant. A potentially significant impact is equivalent to a significant impact and requires the identification of feasible mitigation measures or alternatives.
- A "significant impact" is an impact that exceeds the defined standards of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less-than-significant level.
- A "significant and unavoidable impact" is an impact that exceeds the defined standards of significance and that cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.
- "No Impact" indicates that the project would not have an adverse effect to the environment, either because the threshold of significance does not apply to the project or based on project-specific factors.
- A "cumulatively considerable" contribution to an impact means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
- A "less than cumulatively considerable" contribution to an impact means that the incremental effects of an individual project are not significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

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The proposed Housing Element Update (Housing Element or proposed project) would: 1) amend the City of Novato General Plan (General Plan) to update the Housing Element, 2) take additional actions amending the General Plan, the Downtown Novato Specific Plan, and the Zoning Ordinance as set forth in the Housing Element; and 3) implement programs contained in the Housing Element, including those specifically described below.

2.1 PROJECT LOCATION AND SETTING

The City of Novato is located in north Marin County in the San Francisco Bay Area (see Figure 2.0-1). Novato's borders are characterized by geographical features including Mount Burdell to the north, Big Rock Ridge to the west, Indian Valley open space to the southwest, Ignacio Valley, Pacheco Valle, and Loma Verde open space to the south, Bel Marin Keys wetlands to the southeast, and the bay plains and Petaluma River to the northeast. Urban development in the city is primarily located in the flat, northwest-trending valley that follows Novato Creek, Vineyard Creek, Warner Creek, and other tributaries flowing southeast from the hills to San Pablo Bay.

Highway 101 and State Route 37 provide regional access to the city. Highway 101 is a major north/south regional transportation corridor. State Route 37 connects the city to Sonoma County and provides access to Interstate 80, a major east/west transportation corridor.

Most of the development in Novato is single-family residential, with multi-family housing dispersed throughout the city. Commercial uses are concentrated along Grant Avenue and Redwood Boulevard, in neighborhood shopping centers, and in regional retail shopping centers along Highway 101. Offices buildings are located along Highway 101, in and around Downtown, near the Novato Community Hospital, along Novato and South Novato Boulevards, and within the industrial parks. The Hamilton, Ignacio, and Bel Marin Industrial Parks (collectively referred to as the Novato Industrial Park Precise Development and Master Plan) house the bulk of the City's warehousing, distribution, and manufacturing uses.

2.2 PROJECT BACKGROUND AND HISTORY

State law requires each city and county to adopt a general plan containing at least seven elements including a housing element. The housing element, required to be updated regularly, is subject to detailed statutory requirements and mandatory review by the State Department of Housing and Community Development (HCD). This Housing Element is an update of the City's previous housing element[1], which was adopted by the Novato City Council on March 25, 2003 and certified by HCD on July 3, 2003.

Housing element law requires local governments to plan adequately to meet their existing and projected housing needs, including their share of the regional housing need.[2] Housing element law

[1] The City's 1999 - 2006 housing element may be found beginning on page III-1 of the Novato General Plan at: http://www.cityofnovato.org/Modules/ShowDocument.aspx?documentid=3049

[2] Housing element law is codified in Government Code Sections 65580-65589.8 of the California Codes available at: http://www.leginfo.ca.gov/calaw.html.

is the State's primary market-based strategy to increase housing supply, choice, and affordability. The law recognizes that in order for the private for-profit and non-profit sectors to adequately address housing needs and demand, local governments must adopt land-use plans and regulatory schemes that provide opportunities for, and do not unduly constrain, housing development.

In 2009, City staff began work on updating the Housing Element in conjunction with the City Council-appointed General Plan Steering Committee, comprised of seventeen community members, and the Planning Commission. From June through September 2010, a public hearing and three public workshops were held to consider housing sites and discuss housing issues.

In October 2010, a 23-person Ad Hoc Working Group was formed to discuss and make recommendations on housing policies and potential housing sites. The Ad Hoc Working Group met 12 times to consider housing sites, policies, and programs. Meetings were open to the public.

As an expansion of the community involvement process, the City Council hosted two work sessions for the community in March and April 2011, both of which were very well-attended. The first was focused on Density and Design and the second on Crime and Housing Management. The City Council considered the recommendations of the Ad Hoc Working Group at two meetings, in June and July 2011.

The draft Housing Element was released for public review in October 2012 and a Planning Commission meeting was held to receive comments on the draft. The State Department of Housing and Community Development (HCD) reviewed the draft Housing Element and provided comments to the City on December 20, 2012. City staff revised the draft Housing Element to address HCD comments. A joint City Council/Planning Commission scoping meeting was held on April 1, 2013 to receive comments regarding the Notice of Preparation for this EIR.

City staff, the City Manager's Ad Hoc Group, and the City Council conducted extensive public outreach during the housing element update process. The City posted information on its website (including webcasts of City Council meetings), emailed information to all persons on the Housing Element email list, provided notices to owners of potential sites and property owners surrounding potential sites, and provided notices in the local newspaper. Public meetings were well covered in the local newspapers, including the *Novato Advance* and the *Marin Independent Journal*, and many letters to the editor and op-ed columns appeared in these newspapers.

Groups that participated in the City's Housing Element update process included the Novato Housing Coalition, Stand Up for Neighborly Novato, Sustainable Novato, the Greenbelt Alliance, the Marin Continuum of Housing and Services, the Marin Housing Authority, Eden Housing, Ecumenical Association for Housing, Grassroots Leadership Network, Housing Leadership Alliance, Novato Chamber of Commerce, San Marin Compatible Housing Coalition, Novato Community Alliance, Marin Tenants Voice Council, Novato Community Garden Committee, and the Marin County Commission on Aging.

2.3 PROJECT OBJECTIVES

The following goals and objectives have been identified for the proposed project:

- Work together to achieve the City's housing goals,
- Maintain and enhance existing housing and blend well-designed new housing into existing neighborhoods,
- Use land efficiently to meet housing needs, minimize environmental impacts and maximize opportunities to use alternative transportation modes such as transit, bicycling and walking,
- Provide housing for special needs populations that is coordinated with support services, Build local government institutional capacity and monitor accomplishments to respond to housing needs effectively, and
- Adopt a housing element meeting the requirements for certification by the California Department of Housing and Community Development.

2.4 PROJECT CHARACTERISTICS

This Draft EIR evaluates the potential environmental impacts associated with the adoption and implementation of the Housing Element. The Housing Element has been prepared to respond to current and near-term future housing needs in Novato, as assigned through the state's Regional Housing Needs Allocation (RHNA) process and identified in the Housing Needs Analysis presented in the Housing Element. The Housing Element contains updated information and strategic directions, including policies and specific actions, that the City is committed to undertaking to address its housing needs. A full copy of the City's proposed Housing Element may be accessed at: http://www.cityofnovato.org/Index.aspx?page=1410.

HOUSING ELEMENT COMPONENTS

The Housing Element includes the following sections:

- Introduction
- Evaluation of the Current Housing Element
- Housing Needs Analysis
- Household Income, Housing Costs, and the Ability to Pay for Housing
- Special Needs Housing
- Regional Housing Needs
- Housing Constraints Analysis

- Housing Goals, Policies, and Implementing Programs
- Quantified Housing Objectives
- Appendices

Housing Element Policies and Programs

The Housing Element identifies policies and programs to assist the City in meeting its housing goals. The policies and programs address 15 topic areas:

1. Local Housing Leadership: Policies 1.1 through 1.4, Implementing Programs 1.A through 1.C
2. Fair Housing: Policies 2.1 and 2.2, Implementing Programs 2.A and 2.B
3. Housing Design: Policies 3.1 through 3.3, Implementing Programs 3.A and 3.B
4. Conservation and Energy: Policies 4.1 and 4.2, Implementing Programs 4.A and 4.B
5. Housing Preservation: Policies 5.1 through 5.5, Implementing Programs 5.A through 5.K
6. Housing, Jobs, and Transit: Policies 6.1 through 6.5 Implementing Programs 6.A through 6.C
7. Housing Choices: Policies 7.1 through 7.3, Implementing Programs 7.A through 7.F
8. Mixed Use Housing: Policies 8.1 and 8.2, Implementing Programs 8.A and 8.B
9. Affordable Housing Sites and Incentives: Policies 9.1 through 9.3, Implementing Programs 9.A through 9.I
10. Inclusionary Housing: Policies 10.1 through 10.4, Implementing Program 10.A
11. Accessory Dwelling Units: Policies 11.1 through 11.3, Implementing Program 11.A
12. Special Needs Housing: Policies 12.1 through 12.5, Implementing Programs 12.A through 12.E
13. Special Needs Support Programs: Policies 13.1 through 13.3, Implementing Programs 13.A through 13.C
14. Funding for Affordable Housing: Policies 14.1 through 14.1, Implementing Programs 14.A through 14.C
15. Effective Implementation and Monitoring: Policies 15.1 and 15.2, Implementing Programs 15.A and 15.B

Implementing Programs

The implementing programs in the Housing Element require specific action on the part of the City. Table 2.0-1 identifies each implementing program, including the potential discretionary actions (e.g., zoning code amendment) required for implementation of each program, as well as the timing of implementation. For reference, Tier I programs are those that will be presented and adopted concurrently with the Housing Element. Tier II programs are those that will be undertaken and completed within six months to one year following adoption/certification of the Housing Element. Tier III programs will generally be completed as staff resources are available over the year subsequent to adoption/certification of the Housing Element. Ongoing programs are those that are implemented on an ongoing basis.

TABLE 2.0-1: HOUSING ELEMENT PROGRAMS

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	TIER I IMPLEMENTATION	
HO Program 9.B **Implement Actions and Incentives to Address Remaining Lower Income Housing Need.**	a. Amend the General Plan Land Use Element and Land Use Map, Downtown Novato Specific Plan and Land Use Map and Zoning Ordinance and Zoning Map accordingly to include an Affordable Housing Opportunity Overlay District (AHO) on all or a portion (*) of the sites in Table 63 that provides for a housing density, including multi-family housing, of 20 to 23 dwelling units/acre provided the project meets the following criteria: 1. Include a minimum of 10% very-low income units and 10% low income units – a proportionate increase in very-low income units to a decrease in low income units is permitted (e.g. 15% very-low and 5% low). 2. Ensure that affordable units are deed restricted for a period of not less than 55 years, and in perpetuity if possible. b. Multi-family uses within the densities established under the AHO will be allowed by right, without a conditional use permit or other discretionary permit, provided, however, that multi-family development proposals will be subject to design review. c. Work with developers, other agencies and the community to address Novato's remaining lower income housing need by offering incentives such as density bonuses, options for clustering units, mix of unit types, second units, use of "in-lieu" housing funds, fast-track processing, and reduced fees, as appropriate for proposed lower income housing, including development of the sites in Table 63. d. If one or more of the sites in Table 63 is developed	General Plan Amendment (Text/Map) Downtown Novato Specific Plan Amendment (Text/Map) Zoning Code Amendment (Text/Map)

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	without use of the AHO or with less affordable units than assumed in the Unit Capacity column, the City will commit to assigning the AHO to an additional site(s) capable of offsetting the unmet assumed Unit Capacity. e. Waive fees for processing a merger of parcels identified as Site #1 in Table 63 if both parcels are developed concurrently for housing. f. Net Acreage for Affordable Housing Opportunity Site 1 (1787 Grant Ave.): A minimum 20 ft. setback measured landward from top-of-bank of Novato Creek shall be reserved from development to respect existing flood control and access easements held by the Marin County Flood Control and Water Conservation District and to serve as a buffer between new development and the riparian habitat along Novato Creek. Accordingly, the density calculation for Affordable Housing Opportunity Site 1 shall be based on a net acreage of 1.75 acres, reflecting a reduction in the gross developable area of approximately 0.39 acres as noted in Table 63. This reduction will permit development at the realistic unit capacity as noted in Table 63, while respecting existing riparian habitat and the easements held by the Marin County Flood Control and Conservation District. g. Side and Rear Setbacks for Affordable Housing Opportunity Site 2 (Landing Ct.): h. Site 2 abuts the rear and side yard property lines of several established one-story, single-family residences on Clausing Ave. and Clausing Ct. Given this circumstance, site specific setbacks are recommended to ensure a future multi-family residential building(s) at Site 2 maintains side and rear yard setbacks that provide a reasonable separation from existing adjacent residences. The AHO shall set forth the site specific setbacks applicable to Site 2.Net Acreage for Affordable Housing Opportunity Site 2 (Landing Ct.): The density calculation for Affordable Housing Opportunity Site 2 shall be based on a net acreage of 1.50 acres, reflecting a reduction in the gross developable area of approximately 0.50 acres as noted in Table 63. This reduction will permit development at the realistic unit capacity as noted in Table 63, while ensuring the residential setback as established in the AHO, to assure that future multi-family residential development which may abut the	

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	existing development is of a mass and scale that is complimentary to and compatible with the noted single-family residences.	
Program 9.E **Adopt State-Mandated Density Bonus Ordinance and Local Density Bonus Ordinance for Senior Housing.**	The City will amend its 2001 density bonus ordinance in compliance with Government Code Section 65915. Additionally, the City will adopt a local Density Bonus Ordinance for senior housing which will apply to projects located on sites within the AHO overlay district and proposed for development in compliance with zoning regulations applicable to the overlay. The local Density Bonus Ordinance will allow an increased density from 23 to 30 units/acre for such projects.	Zoning Code Amendment (Text)
HO Program 12.A **Adopt an Emergency Shelter Ordinance.**	Pursuant to Government Code Section 65583(a)(4)(A), adopt an ordinance that permits emergency shelters at the Hamilton Industrial Park and/or Ignacio Industrial Park without a conditional use or other discretionary permit. Emergency shelters shall only be subject to the same development and management standards that apply to uses in the LIO zone, except the following objective development and management standards may be established: a. The maximum number of beds or persons permitted to be served nightly by the facility. b. Off-street parking based upon demonstrated need, provided that the standards do not require more parking for emergency shelters than for other residential or commercial uses within the same zone. c. The size and location of exterior and interior onsite waiting and client intake areas. d. The provision of onsite management. e. The proximity to other emergency shelters, provided that emergency shelters are not required to be more than 300 feet apart. f. The length of stay. g. Lighting. h. Security during hours that the emergency shelter is in operation.	General Plan Amendment (Text/Map) Zoning Ordinance Amendment (Text) Master Plan Amendment (Hamilton/Ignacio Industrial Park) Precise Development Plan Amendment (Hamilton/Ignacio Industrial Park)
TIER II IMPLEMENTATION		
HO Program 1.A **Prepare Information and Conduct Community Outreach**	Coordinate with local businesses, housing advocacy groups, neighborhood groups, community organizations, developers, the Chamber of Commerce and others in building public understanding of housing	None.

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
Activities on Housing Issues.	programs and needs. *Topics* a. Housing needs. b. Housing programs (second units, rental assistance, rental mediation, first time homebuyer education, energy assistance and rehabilitation loans, etc.). c. Fair Housing laws. *Activities* a. Provide written material at public locations (including social service centers and at public transit locations, where feasible) and on the City's website. b. Provide information to real estate professionals, property owners and tenants on their rights, responsibilities, and the resources available to address fair housing issues. c. Work with local non-profit and service organizations to distribute information to the public. d. Provide public information through articles in the local newspaper and with cable TV public service announcements. e. Work with other public agencies, businesses and community groups, unions, the building and real estate industry, non-profit housing sponsors, school districts, faith-based organizations, health and human service providers, environmental groups, property managers, tenant organizations, and other interested parties within Novato that might be mobilized to help support affordable and special needs housing developments. f. Fair Housing in-service training, press releases, direct contact with interest groups, and posting of fair housing laws, contacts and phone numbers.	
HO Program 3.A **Prepare Multi-family Housing Design Criteria.**	Continue to implement the Design Review process, evaluate existing design criteria for multi-family housing, and establish modification as needed that will establish effective, consistent development review factors for use by applicants, the community, staff and decision-makers in the expeditious review of multi-family housing proposals. The design criteria may include but not be limited to: a. Context with surroundings, site planning, building massing and layout, height transitions, public safety design features (e.g., security cameras and fencing	Zoning Code Amendment (Text)

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	with keyed gates), architecture and materials, well-planned layout of complex and individual units for maximum natural ventilation and lighting, landscape design, open space, outdoor lighting, and density compatibility provisions. b. Common facilities should be required for projects over 20 units; facilities may include common room, outdoor play areas, pools, study areas, etc. c. Consider transition criteria to encourage compatibility when structures are proposed near single family residential buildings on adjoining properties. For properties where the dimension(s) for a transition area(s) is specified, specific regulations for permitted and prohibited development within the transition area(s) shall be established. d. Limits on maximum site coverage and requirements for minimum setback provisions should be adopted. e. Floor area ratios in residential/mixed used areas should be consistent with the character of the surrounding area.	
HO Program 3.B **Update Parking Standards.**	Modify parking standards based on the most up-to-date empirical studies to facilitate infill, transit-oriented, mixed use and accessory dwelling unit development. Modifications to consider may include, but are not limited to, the following: a. Reduction of multi-family parking requirements for three-or more-bedroom units from 2.2 spaces to 2.0 spaces, to be consistent with single family home standards. b. Reduction of parking requirements for projects near transit. c. Provision of opportunities for shared parking for mixed use developments. d. Allowances for off-site parking. e. Allowances for the establishment of a landscape parking reserve that is designated for parking if needed in the future. f. Evaluation of opportunities for underground parking and auto sharing. g. Allowances, in certain instances, for parking standards to be adjusted on a case-by-case basis, depending upon the location and characteristics of	Zoning Code Amendment (Text)

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	the development and its intended occupants.	
HO Program 5.A **Ensure Adequate Tenanting, Management and Safety for Multi-family Housing.**	Ensure adequate tenanting, management and safety for multi-family housing by implementing the following: a. As legally permissible, initiate City provisions for review of the management of multi-family housing to implement best management practices. Zero tolerance for criminal activity is a goal. Programs should apply to projects of a defined size and/or type. Best management practices should include but not be limited to addressing the following performance measures: 1. Property management staffing 2. Tenant selection plan 3. Lease agreement 4. Security-minded design 5. Resident services 6. Community and activity space 7. Communication b. Investigate additional City and/or community-based programs to reduce crime in multi-family housing, including Crime Free Program and voluntary programs initiated by multi-family housing managers. Consider the benefits/permissibility of restricting access to sites for residents and invited guests only (monitored by onsite manager) and encouragement of social opportunities to engage the residents and build a sense of "ownership" and community.	Municipal Code Amendment (Text)
HO Program 5.D **Modify the City's Condominium Conversion Ordinance.**	Consider amendments to the City's Condominium Conversion Ordinance which may, as permitted by law, include : a. Prohibition of conversion of rental units to condominiums unless the effective vacancy rate for rental housing is more than 5% or there are special circumstances related to providing long-term, regulated affordable units; b. Exemptions for limited equity residential cooperatives which provide long term affordability for very low or low income households; c. Requirements for relocation assistance when units are converted; d. First right of refusal of purchase of units by occupants; e. Minimum of 20 percent of the units be affordable	Municipal Code Amendment (Text)

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	to low income households; and f. Implementation of resale controls.	
HO Program 8.A **Apply Mixed Use Development Standards and Incentives.**	Apply existing development code standards to make affordable housing development more feasible in mixed-use projects. Incentives in the Zoning Code to consider include: a. Height limit bonuses, especially in Downtown. b. Exceptions in applying development standards (FAR, height limits, setbacks, lot coverage) based on the location, type, and size of the units, and the design of the development. c. Allowance for the residential component of a mixed use development to be 'additive' within the established FAR for that zone. d. Allowance for reduced and shared parking based on the use mix. e. Allowances for off-site parking.	Zoning Code Amendment (Text)
HO Program 11.A **Modify Accessory Dwelling Unit Development Standards and Fees.**	Continue to allow accessory dwelling units, and review and modify the following accessory dwelling unit development requirements as deemed feasible. a. Continue to apply design criteria for second units that meet performance standards and design guidelines, and continue to allow processing of the application at the staff level. Continue to provide courtesy noticing. b. Explore exceptions to parking requirements where the unit is located near transit or in a neighborhood which has wider streets with street parking readily available. c. Consider reduction or waiver of City fees as appropriate in recognition of the small size and low impacts of accessory dwelling units and to encourage the creation of units and work with special districts to do same.	Zoning Code Amendment (Text)
HO Program 12.C **Adopt a Reasonable Accommodation Ordinance.**	Adopt an ordinance to provide individuals with disabilities reasonable accommodation to ensure equal access to housing in accordance with fair housing laws. The ordinance will establish a procedure for making requests for reasonable accommodation in land use, zoning and building regulations, policies and procedures. The procedure will be a ministerial process, subject to approval by the Community Development Director applying following decision-	Municipal Code Amendment(s) (Text)

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	making criteria: a. The request for reasonable accommodation would be available to individuals with a disability protected under fair housing laws. b. The requested accommodation is necessary to make housing available to an individual with a disability protected under fair housing laws. c. The requested accommodation would not impose an undue financial or administrative burden on the City. d. The requested accommodation would not require a fundamental alteration in the nature of the City's land use and zoning program.	
HO Program 12.D **Amend the Municipal Code to Permit Transitional and Supportive Housing.**	Pursuant to Government Code Section 65583(a)(5), the City will amend the municipal code governing all residential zoning districts to permit transitional and supportive housing as a residential use, subject only to those regulations that apply to other residential dwellings of the same type in those zones. Add definitions for "Transitional Housing" and "Supportive Housing" to the municipal code.	Zoning Code Amendment (Text)
HO Program 12.E **Amend the Municipal Code to Allow Farmworker Housing as a Permitted Use in the Agricultural District.**	In order to provide housing for farmworkers, amend the municipal code to allow farmworker housing in the Agricultural district as a permitted use, consistent with the provisions of California Health and Safety Code Section 17021.6. Include a definition for farmworker housing and occupancy requirements consistent with Health and Safety Code Section 17021.6.	Zoning Text Amendment (Text)
TIER III IMPLEMENTATION		
HO Program 4.A **Promote Solar Design.**	Promote design standards relating to solar orientation, including lot layout for subdivisions, location and orientation of new structures, and landscaping.	Zoning Code Amendment (Text) Development Standards Amendment (Text)
HO Program 5.J **Preserve Mobile Home Parks.**	Consider measures such as refinancing the Marin Valley Mobile Country Club to further save money and to permit the financing of future needed capital improvements to the park. Consider possible zoning amendments to preserve mobile home parks for mobile home park use.	Zoning Code Amendment (Text/Map)
	Review implementation of live/work and home	

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
HO Program 6.B **Promote Zoning for Live/Work Opportunities.**	occupation provisions in the Zoning Ordinance to ensure effective standards for home occupations and live/work projects.	Zoning Code Amendment (Text)
HO Program 6.C **Transit-Oriented Development Incentives.**	Consider zoning ordinance amendments which provide incentives for transit-oriented development where specified criteria are met. Such criteria may include, but not be limited to: a. Distance to transit routes. b. Affordability of units. c. High-quality design. d. Integration of transit-oriented components. Incentives could include, but not be limited to: a. Parking reductions. b. Off-site parking alternatives. c. Transit impact fee reductions.	Zoning Code Amendment (Text)
HO Program 7.A **Encourage Co-Housing, Cooperatives, and Similar Collaborative Housing Development.**	Work with developers and non-profit housing sponsors to provide multi-family housing using a co-housing model or similar approaches that feature housing units clustered around a common area and shared kitchen, dining, laundry and day care facilities. To facilitate the production of co-housing, housing cooperatives or similar housing arrangements evaluate and incorporate zoning revisions as needed that will accommodate them. Zoning amendments may include, but are not limited to allowances for a common gathering facility that may include a small meal preparation area, shared kitchen, and group dining space.	Zoning Code Amendments (Text)
HO Program 7.C **Zone and Provide Appropriate Standards for SRO Units.**	In order to provide housing for extremely low income households, amend the municipal code to specifically allow single-room occupancy units in the Mixed Use, R10 and R20 districts as a conditional use. Provide appropriate parking, development and management standards. Consider reducing per unit fees and other standards in recognition of the small size and low impacts of SRO units.	Zoning Code Amendments (Text)
HO Program 7.E **Implement Transfer of Development Rights (TDR).**	Consider the Transfer of Development Rights (TDR) if it will result in improved housing opportunities including workforce, senior or special needs affordable housing in appropriate locations.	Zoning Code Amendments (Text)
	a. Consider amending Downtown Core Retail and	

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
HO Program 8.B **Potential Mixed Use Sites**	Downtown Core Business Districts to allow multi-family dwellings in a mixed use project as a permitted use on upper floors or at the rear of the site. b. Consider amending Neighborhood Commercial and Mixed Use Districts to allow multi-family dwellings in a mixed use project as a permitted use in appropriate areas of the site.	Zoning Code Amendments (Text)
HO Program 9.A **Facilitate Development at Housing Opportunity Sites, including Vacant and Underutilized Properties in the Downtown Area.**	Undertake appropriate General Plan amendments, rezoning, and expedited environmental review, and work with private property owners and/or developers to facilitate consolidation of properties within the Downtown, and other implementing actions to facilitate the construction of market rate and affordable housing.	General Plan Amendment (Map/Text) Zoning Code Amendments (Map/Text)
ONGOING		
HO Program 1.B **Collaborate on Inter-Jurisdictional Strategic Plan for Housing.**	Coordinate with other jurisdictions on strategic planning for housing. Work toward implementing, whenever possible, agreed-upon "best practices," shared responsibilities and common regulations to efficiently and effectively respond to housing needs within a countywide framework.	None
HO Program 1.C **Undertake Coordinated Lobbying Efforts on State Legislation.**	Identify and lobby for possible changes to State law that help to most effectively implement local housing solutions and achieve housing goals. Examples of legislative issues of critical importance could include: more direct input from local jurisdictions on the development of Regional Housing Needs Allocation, funding allocations for affordable housing, and modifications to State law that would make it easier for jurisdictions to voluntarily share funding and credit for meeting proportionate allocations.	None
HO Program 2.A **Require Non-discrimination Clauses.**	Continue to provide nondiscrimination clauses in rental agreements and deed restrictions for housing, including Below Market Rate housing, constructed with City participation.	None
HO Program 2.B **Respond to Complaints.**	Facilitate fair and equal housing opportunity by designating the Community Development Director as the City's Equal Opportunity Coordinator. Refer discrimination complaints to the appropriate legal service, county or state agency, or Fair Housing of Marin. If mediation fails and enforcement is necessary,	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	refer tenants to the State Department of Fair Employment and Housing or HUD, depending on the nature of the complaint. Undertake activities to broaden local knowledge of Fair Housing laws through actions identified in HO Program 1.A.	
Program 4.B **Implement "Green" Building Standards and Processes.**	Consistently implement the City's adopted "Green Building Program" to encourage the use of green building materials and energy conservation.	None
HO Program 5.B Link **Code Enforcement with Public Information Programs.**	Implement housing, building and fire code enforcement to ensure compliance with basic health and safety building standards and provide information about rehabilitation loan programs for use by qualifying property owners who are cited. In particular, contact owners of structures that appear to be in declining or substandard condition, offer inspection services, and advertise and promote programs that will assist in funding.	None
HO Program 5.C **Implement Rehabilitation and Energy Loan Programs.**	Community Development staff will coordinate with government and businesses, (e.g., Energy Upgrade California, the Marin Housing Authority, PG&E and participating contractors) to procure funding (grants and/or loans), and qualifying energy upgrades for eligible owner and renter households. Program resources and contact information will be added to the City's website.	None
HO Program 5.E **Inventory Affordable Housing.**	Maintain an up-to-date inventory of affordable housing in Novato and conduct periodic surveys of rental unit vacancy and affordable for-sale costs. As needed, work with the property owners and/or other parties to, where feasible, conserve existing affordable units as part of Novato's affordable housing stock.	None
HO Program 5.F **Maintain Existing Affordable For-Sale and Rental Housing.**	Work with affordable housing owners and non-profit sponsors seeking to maintain and/or rehabilitate affordable housing units to in large part maintain ongoing affordability of the units. Actions may include, but not be limited to: a. Maintain and update contact information for mortgage assistance and non-profit housing assistance for ownership and rental housing. b. Identification of possible support necessary to obtain funding commitments from governmental programs and non-governmental grants. c. Assistance in permit processing.	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	d. Possible waiver of fees. e. Possible use of local funds if available.	
HO Program 5.G **Preserve At-Risk Units.**	Annually monitor assisted housing development units at risk for conversion to market rate due to termination of federal rent subsidies. For at-risk units encourage and facilitate, to the extent possible, participation by property owners in federal, state and/or local housing assistance programs that maintain affordability of existing multi-family rental housing developments. City efforts to preserve at-risk units include, but are not limited to: 1. Develop a website with information and available links to federal, state and local resources, including: Community Development Block Grant (CDBG) programs. HOME Program. Section 8 Housing Choice Voucher Program. Marin County Residential Rehabilitation Loan program. Low Income Housing Credit Program. Marin Housing's Housing Stability Program (formerly RMR). Assistance from Local Philanthropies. City of Novato Housing Opportunity Fund. 2. Maintain, on the City's website, a list of for-profit and nonprofit housing providers to assist with timely action (acquisition, etc.) regarding notification of units scheduled to convert to market-rate in the near term. 3. Work with owners, tenants, for-profit and nonprofit organizations to assist in the acquisition of at-risk projects to ensure long-term affordability of the development. For at-risk units, annually contact property owners, assess need and interest in acquisition by for-profit or non-profit partners. 4. The City will support applications by for-profit and nonprofit housing providers for funding, as available and appropriate, to preserve or purchase at-risk units to maintain their affordability.	None
HO Program 5.H **Provide Assistance to Homeowners of Below Market Rate**	Provide owners of Below Market Rate (BMR) units with assistance in order to assist individuals with retention of below market rate units. Contact homeowners as soon as the City receives a notice of	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
Units.	default or sale, and provide information available relating to foreclosure. Refer homeowners to the appropriate agency, such as the Marin Housing Authority, as appropriate. Provide links on the City's website and distribute informational materials, if available.	
HO Program 5.I **Support Volunteer Efforts.**	Support community service clubs that provide volunteer labor-assistance housing improvement programs for homeowners physically or financially unable to maintain their properties. Support includes, but is not limited to providing a City website link to active not-for-profit service clubs, and City support (letter of recommendation, etc.) as appropriate for said clubs seeking grant funding for supplies and/or services.	None
HO Program 5.K **Regulate Displacement of Residential Units.**	Consistent with State Law regulate the removal or displacement of residential units.	None
HO Program 6.A **Identify Existing Employee Housing Opportunities.**	Work with the Novato school district, public agencies, and existing businesses to seek opportunities for helping their employees find needed housing, such as mortgage buy-downs or subsidies, rent subsidies, etc. Additionally, to better inform local employees about local, affordable housing stock, staff will update the City's website to include direct links to property management for lower income apartments, and for sale housing within Novato.	None
HO Program 7.B **Facilitate Homesharing and Tenant Matching Opportunities.**	Work with non-profit organizations including but not limited to Homeward Bound to develop a program to encourage homesharing by matching potential tenants with homeowners. The City in collaboration with non-profit organizations will consider and, if feasible, host a link within the City's website to homesharing and tenant matching contact information.	None
HO Program 7.D **Housing Opportunities on School District Properties.**	Work with school districts and neighborhood groups to develop surplus or underdeveloped school district property or portions of active schools for affordable housing for teachers and other school personnel. Establish an equitable selection process for school district employees if the district puts up the land and therefore has an equity interest in the housing development.	None
HO Program 7.F	Assist in the Rehabilitation and Production of Housing for Extremely Low-income (ELI) Households by	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
Rehabilitation and Production of Housing for Extremely Low-income (ELI) Households.	undertaking the following: 1. Develop a website with information and available links to federal, state and local resources, including: Community Development Block Grant (CDBG) programs. HOME Program. Marin County Residential Rehabilitation Loan program. Low Income Housing Credit Program. Marin Housing's Housing Stability Program (formerly RMR). Assistance from Local Philanthropies. City of Novato Affordable Housing Trust Fund. 2. To the extent funding is available in the City's Affordable Housing Trust Fund, priority shall be given to its application towards the rehabilitation and/or production of units for ELI households. 3. The Community Development Department shall, as a matter of policy and to the extent feasible, expedite entitlement and permit processing for housing developments that include 10% or more of the proposed units for ELI households. 4. Study and if deemed feasible apply, on a "sliding scale", reduced application processing fees for residential developments that include 20% or more of the proposed units for lower income households. On a percentage basis, the "sliding scale" should consider maximum fee reductions for units proposed for ELI households.	
HO Program 9.C **Seek Increased Multi-Family Housing Opportunities.**	When undertaking City-wide and/or neighborhood General Plan amendments, specific plans, rezonings, or a similar community visioning process, the City will identify sites for multi-family affordable workforce and special needs housing where opportunities are available. Such sites and opportunities may include or consider the following: a. Land owned by the City or other governmental agencies (such as school districts). b. Re-use of underutilized or non-viable commercial and/or industrial sites. c. Parking lots. d. Residential, Commercial and Mixed Use sites where higher density residential is feasible. e. Appropriate sites in single family neighborhoods	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	where duplexes or small multi-family uses would be appropriate. f. Prepare area-wide or specific plan environmental baseline data and assessment of development impacts under maximum development scenarios as a way to assess area-wide impacts and mitigation. g. Use environmental assessments to expedite processing for infill and affordable housing, such as linking plans to CEQA exemptions and expedited review, consistent with CEQA Section 15332. h. Establish objectives and commitments in the plans so that project-specific review can focus on site-specific issues such as design. i. Provide clear guidelines and incentives for the development of housing in conformance with current local and State laws to streamline processing for subsequent development proposals.	
HO Program 9.D **Apply CEQA Exemptions and Expedited Review.**	Consistent with CEQA Section 15332 ("Infill Development Projects"), the City will facilitate infill development within urbanized areas consistent with local general plan and zoning requirements that may be categorically exempt from CEQA review. In addition, the City will consider area-wide assessments or Program EIR assessing area-wide infrastructure and other potential "off-site" impacts to expedite the processing of subsequent affordable housing development proposals.	None
HO Program 9.F **Facilitate Affordable Housing Development Review.**	Affordable housing developments shall receive priority and efforts will be made by staff and decision-makers to: a. Provide technical assistance to potential affordable housing developers in processing requirements, including community involvement. b. Consider project funding and timing needs in the processing and review of the application. c. Provide the fastest turnaround time possible in determining application completeness.	None
HO Program 9.G **Reduced Planning Processing Fees.**	Evaluate and consider waiver or reduction of planning processing fees as deemed feasible on a sliding scale related to the levels of affordability, such as a rebate of planning fees for affordable units based on the proportion of such units in the project.	None
HO Program 9.H **Special District**	Work with the water and sanitary districts to identify possible reductions or waiver of some fees for water	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
Fees.	and sewer hook-ups for affordable housing for lower income households.	
HO Program 9.I **Long-Term Housing Affordability Controls**.	The City will apply resale controls and income restrictions to ensure that affordable housing provided through incentives, density bonus, General Plan amendments, re-zonings and conditional approvals as appropriate remain affordable over time to the income group for which it is intended.	None
HO Program 10.A **Work with an Affordable Housing Management Entity.**	Continue to fund administration of existing and future affordable housing developments/programs including, as appropriate, through the services of an outside consultant for management of all or some of the affordable housing contracts in Novato in order to ensure on-going affordability, and implement resale and rental regulations for affordable housing units and assure that these units remain at an affordable price level for the longest term possible.	None
HO Program 12.B **Assure Good Neighborhood Relations Involving Emergency Shelters and Residential Care Facilities.**	Continue to encourage positive relations between neighborhoods and providers of emergency shelters and residential care facilities. As exists with the providers or sponsors of the approved transitional housing programs at Hamilton Field and community care facilities like Novato Human Needs Center, providers (existing and new) will be encouraged to continue outreach programs with their neighborhoods. The following could be considered: a. It is recommended that a staff person from the provider agency be designated as a contact person with the community to respond to questions or comments from the neighborhood. b. Outreach programs could designate a member of the local neighborhood to the Board of Directors of the service provider. c. Neighbors of emergency shelters, transitional housing programs, and community care facilities should be encouraged to provide a neighborly and hospitable environment for such facilities and their residents.	None
HO Program 13.A **Assist in the Effective Use of Available Rental Assistance Programs.**	Develop and implement measures to make full use of available rental assistance programs. Actions include: a. Maintain descriptions of current programs and contacts to hand out to interested persons. b. Provide funding support, as available and appropriate (e.g., the City has previously provided	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	financial assistance to the Novato Human Needs Center). c. Coordinate with the Marin Housing Authority on rental housing assistance programs, such as Shelter Plus Care, AB2034, HOPWA, the Rental Assistline, Rental Deposit Program, and Welfare to Work Program.	
HO Program 13.B **Maintain Programs to Address Homeless Needs.**	Continue to support the 80 bed New Beginnings Center with training and educational services, the Next Key vocational training facility with 32 SROs, the Continuum of Care's 60 units of transitional housing within Meadow Park and housing placement services offered by the Novato Human Needs Center to the extent resources are available and allocated.	None
HO Program 13.C **Conduct Outreach for Developmentally Disabled Housing and Services.**	Work with the Golden Gate Regional Center and the Marin Housing Authority to implement an outreach program that informs families within Novato on housing and services available for persons with developmental disabilities. Provide information on services on the City's website, and distribute brochures provided by the service providers.	None
HO Program 14.A **Maintain and Develop Local Sources of Funding for Affordable Housing.**	Continue to work toward the maintenance and development of local sources of funding to support affordable housing, including consideration of: a. Continue accepting in-lieu fee payments as prescribed under inclusionary requirements for residential development. b. Voluntary donations, grants and matching funds. c. Land acquisition or donation and land banking. d. Work with special districts that serve Novato to provide a reduction(s) in connection fees for deed restricted affordable very low income units.	None
HO Program 14.B **Seek Funding Resources.**	Seek matching grant funds to leverage the City's affordable housing funds for specific projects and programs (such as mortgage buy-downs, first time homebuyer, etc.). Potential sources of funding include, but are not limited to: a. CDBG/HOME. b. Marin Community Foundation. c. Applications for mortgage revenue bonds and/or mortgage credit certificates. d. Housing Trust Fund.	None

PROGRAM	*DESCRIPTION*	*POTENTIAL DISCRETIONARY ACTION*
	e. Tax Credit Allocation.	
HO Program 14.C **Coordinate Funding Among Development Proposals.**	The City of Novato will pursue and/or participate in efforts including but not limited to available City housing funds, annual allocation of CDBG funds, and Home funds to ensure adequate coordination between City and local jurisdictions and development proposals on their various housing activities and funding proposals, ensuring that local projects are competitive for outside funding sources and resources are used in the most effective manner possible.	None
HO Program 15.A **Conduct an Annual Housing Element Review.**	Assess Housing Element implementation through annual review by the Novato Community Development Department, pursuant to Government Code Section 65400.	None
HO Program 15.B **Update the Housing Element Regularly.**	Undertake housing element updates in accordance with State law requirements.	None

Many of the programs identified in Table 2.0-1 are continued from the previous Housing Element and identify the City's continued support in encouraging adequate housing Citywide. The majority of housing that can be accommodated in the city is allowed under the adopted General Plan, Zoning Code, and the currently adopted Housing Element. However, the Housing Element identifies new programs that would result in changes in local regulatory conditions that would accommodate housing that is not accommodated under the City's current regulations. These programs are identified and described in detail below.

PROGRAM 9.B

Implementation of Housing Element Program 9.B represents the core of the Housing Element in terms of demonstrating the City has identified and properly designated sites capable of meeting its unmet Regional Housing Needs Allocation (RHNA) in the low and very low income categories. To implement Program 9.B, the City has identified five (5) housing opportunity sites that could potentially support development of new multi-family residential units within a density range meeting the City's unmet RHNA in the low and very low income categories. The five identified housing opportunity locations are:

1. 1787 Grant Avenue, APN 141-201-48 & 141-201-12
2. Landing Court, APN 153-162-59
3. Redwood Boulevard, APN 125-202-18 (4-acre portion of 39.92 acre site)
4. 7506 Redwood Boulevard, APN 143-011-08

5. 1905 Novato Boulevard, APN 140-011-66

These sites are shown on Figure 2.0-2 and are referred to herein as the Affordable Housing Opportunity Sites (AHO Sites).

Implementation of Program 9.B requires the City to establish appropriate zoning measures to permit the development of multi-family housing on the identified housing opportunity sites without the need for discretionary development entitlements (e.g., master plan, use permit) other than design review. To meet this requirement, the City is proposing to assign an Affordable Housing Opportunity Overlay (AHO) designation to each of the noted affordable housing opportunity sites. The AHO would be an overlay zoning district specifying the purpose, applicability, allowed land uses, permit requirements, development standards, density, and affordable housing requirements relevant to future multi-family residential development proposals on any of the identified affordable housing opportunity sites. The AHO would have the following key provisions:

- principally permit multi-family residential development containing affordable units with Design Review only;
- permit accessory uses normally allowed for multi-family residential developments (e.g., home occupations)
- allow any land use normally permitted by the primary zoning district applicable to the housing opportunity site, subject to the land use permit required by the primary zoning district;
- assign a residential density range of 20 to 23 dwelling units per net acre for a multi-family residential project;
- specify development standards (e.g., setbacks, height limits, parking requirements, etc.) reflecting existing multi-family residential standards contained in the Novato Zoning Code; and
- require on-site parking consistent with the parking levels specified in the State Density Bonus law as follows: studio & 1-bedroom units -1 space per unit and 2-bedroom & 3-bedroom units -2 spaces per unit.

Adoption of the AHO would require general plan and zoning code amendments. The general plan amendment would involve identifying the five housing opportunity sites on the General Plan Land Use Map and denoting the applicability of the AHO thereto. The text of the Land Use Chapter of the General Plan would also need to be amended to acknowledge the AHO, including its implementation through the Novato Zoning Code, and establish the multi-family residential density level recommended by the Housing Element. The Downtown Specific Plan must be amended in manner similar to the General Plan to recognize and identify the location of the AHO. The corresponding zoning code amendments would involve revising the Novato Zoning Map to identify the five housing opportunity sites and noting the applicability of the AHO. Finally, the provisions of the AHO would be added as a distinct division within the Zoning Code.

HOUSING ELEMENT PROGRAM 9.E

Housing Element Program 9.E commits the City to updating the existing density bonus provisions contained in the Novato Zoning Code to reflect current state density bonus law, as specified in California Government Code Section 65915. The state density bonus provisions have been in existence since 1979, representing the state's long held mandate requiring local agencies to grant density bonuses and/or other incentives to developers of projects meeting certain affordability levels. Currently, state law mandates that local agencies must grant at least one density bonus and permit additional housing incentives to developers who request the same and agree to construct housing affordable to lower-income households. A residential project is eligible to receive the state density bonus when the project meets the following minimum affordability thresholds:

- sets aside at least 10 percent of the total units as affordable to low-income households; or
- sets aside at least 5 percent of the total units as affordable to very low-income households; or
- sets aside at least 10 percent of the total units in a common interest development (e.g., condominiums) as affordable to moderate-income households; or
- proposes a senior citizen housing development of a minimum of 35 units for senior citizens (age 55 or older).

The state density bonus range for each income category is based on the percentage of affordable units reserved in a given housing project. As the percentage of affordable units increases in each income category, so too does the density bonus level. Below are the state density bonus ranges offered in each income category from minimum to maximum:

- low income - 20% to 35% above the base maximum density
- very low income - 20% to 35% above the base maximum density
- moderate income common interest development - 5% to 35% above the base maximum density
- senior citizen housing development - 20% above the base maximum density

State density bonus law also requires local agencies to offer development concessions or incentives. A concession or incentive may include:

- a reduction in site development standards; or modification of zoning code requirements (including a reduction in setbacks, square footage requirements, or parking spaces; or architectural design requirements which exceed the minimum building standards);
- approval of mixed use zoning in conjunction with the housing project if commercial, office, industrial, or other land uses will reduce the cost of the housing development, and if such nonresidential uses are compatible with the project; or

- other regulatory incentives or concessions proposed by the developer or the city or county, which result in identifiable cost reductions.

In addition to adopting the state density bonus law, Housing Element Program 9.E identifies the adoption and implementation of a local density bonus for senior housing projects. The senior housing bonus is proposed to offer a local incentive to the development of senior residential units on the affordable housing opportunity sites. To qualify for the local senior housing bonus a project would need to reserve at least 20% of the total units in the development as affordable to senior citizens of low and very-low incomes. The local senior bonus would offer a density bonus allowing a maximum density level of up to 30-units per acre for the affordable housing opportunity sites. The City's local senior housing bonus would be in addition to any state density bonus afforded to a senior housing project.

HOUSING ELEMENT PROGRAM 12.A

Housing Element Program 12.A obligates the City to adopt an ordinance permitting emergency shelters as a principally permitted use within the Hamilton Industrial Park and Ignacio Industrial Park areas (see Figure 2.0-2). The purpose of this program is to meet the requirements of California Government Code Section 65583(a)(4)(A), which mandates local agencies identify zoning districts and establish standards allowing emergency shelters without the need to obtain discretionary permits, such as a use permit. Implementation of this program would require a general plan text amendment to add emergency shelters as an acceptable land use in the definition of the Light Industrial Office (LIO) land use designation as it applies to the Hamilton Industrial Park and Ignacio Industrial Park Areas. Additionally, the City is proposing to amend the master plan applicable to the Hamilton Industrial Park and Ignacio Industrial park areas to permit the establishment of emergency shelters as a principally permitted use. These particular areas were identified as suitable locations for emergency shelters due to the availability of commercial structures of a size that could accommodate an emergency shelter facility(ies). The master plan amendment would include development and management standards applicable to emergency shelters specifying:

a. The maximum number of beds or persons permitted to be served nightly by a facility.

b. Required off-street parking based upon demonstrated need, which does not exceed the parking level required of the commercial uses in the noted industrial park areas.

c. The size and location of exterior and interior onsite waiting and client intake areas.

d. The provision of onsite management.

e. The proximity to other emergency shelters, provided that emergency shelters are not required to be more than 300 feet apart.

f. The length of stay.

g. Lighting.

h. Security during hours that the emergency shelter is in operation.

Subsequent Development

The Housing Element does not approve or entitle development nor does it require development. The Housing Element presents the City's plan to accommodate housing, as required by state law.

The City's adopted General Plan, Zoning Code, and other regulations currently accommodate residential development. State law requires cities and counties to provide density bonuses, as specified under Government Code Section 65915, to permit farmworker housing as provided by Health and Safety Code Section 17021.6, and to permit transitional and supportive housing as provided by Government Code Section 65583(a)(5). Future residential development consistent with the City's adopted regulations or as allowed by state law could occur regardless of adoption and implementation of the proposed project.

The proposed project would establish five AHO sites that currently would not accommodate multi-family or high density residential development, would create a senior density bonus to incentivize needed senior affordable housing , and would add emergency shelters (not to exceed a total of 52 beds) to the list of permitted uses at the Hamilton and/or Ignacio Industrial Park.

Future development of housing allowed under the AHO could result in one of three scenarios on any of the sites: 1) development of multi-family housing at the 20 to 23 dwelling unit per net acre density range established by the AHO designation, 2) development of multi-family housing with a maximum allowable state density bonus of 35% in accordance with state law, and 3) development of senior multi-family housing with a local density bonus allowing up to a maximum of 30 dwelling units per acre as allowed under Program 9.E. and with a maximum allowable 35% density bonus in accordance with state law. The number of units that could be developed under each scenario is shown in Table 2.0-2.

TABLE 2.0-2: AFFORDABLE HOUSING OVERLAY SITES DEVELOPMENT POTENTIAL

SITE	APN	TOTAL ACRES	NET BUILDABLE ACRES*	HOUSING ELEMENT TABLE 63: UNIT CAPACITY 20 DU/AC	***SCENARIO 1:*** MULTIFAMILY HOUSING 23 DU/AC	***SCENARIO 2:*** MULTIFAMILY HOUSING CAPACITY WITHMAX ALLOWABLE (35%) STATE DENSITY BONUS	***SCENARIO 3:*** SENIOR HOUSING CAPACITY WITH CITY DENSITY BONUS AND MAX ALLOWABLE (35%) STATE DENSITY BONUS
1	1787 Grant Ave. 141-201-48, 141-201-12	2.14	1.75	35	**40**	**54**	**66**
2	Landing Court 153-162-59	2.11	1.5	30	**3**	**46**	**57**
3	Redwood Blvd. 125-202-18	4	4	80	**92**	**125**	**153**
4	7506 Redwood Blvd. 143-011-08	1.76	1.76	35	**40**	**54**	**66**
5	1905 Novato Blvd. 140-011-66	1.06	1.06	21	**24**	**33**	**40**
TOTAL		**11.07**	**10.07**	**201**	**230**	**312**	**382**

2.5 RELATIONSHIP WITH THE NOVATO GENERAL PLAN, DOWNTOWN SPECIFIC PLAN, AND ZONING ORDINANCE

General Plan

The General Plan serves as the blueprint for development in the city. It is a long-range planning document that describes the goals, policies and programs to guide decision making. Once the General Plan is adopted, all development-related decisions must be consistent with the plan. If a development proposal is not consistent, the development plan must be revised or the General Plan itself must be amended. State law requires a community's General Plan to be internally consistent. This means that the Housing Element, although subject to special requirements and a different schedule of updates, must function as an integral part of the overall General Plan, with consistency among it and the other General Plan elements.

A comprehensive update of the Novato General Plan was conducted in the mid-1990s, and the current plan was adopted in 1996. It contains nine elements, including Land Use, Transportation, Housing, Environment, Safety & Noise, Economic Development and Fiscal Vitality, Human Services, Public Facilities and Services, and Community Identity. Land use and development projections of the General Plan are linked to planned facilities and infrastructure capacity. Specific issues addressed in other sections of the General Plan but which are linked to and supported in the Housing Element include: (1) the design of housing (Community Identity); (2) relationship of jobs to housing supply (Economic Development and Fiscal Vitality); (3) Land Use); and (4) support

service for housing (Human Services). The Housing Element update contemplates amendment of the General Plan to maintain consistency therewith. Section 3.9, Land Use, analyzes the proposed project's potential to conflict with an applicable land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect , including the General Plan.

Downtown Specific Plan

The Downtown Specific Plan was adopted to propose the improvements, policies and programs to revitalize and enhance the Downtown. AHO Site 4 is located in the Downtown. The Housing Element includes programs to support the development of housing in the Downtown, including Program 8.A which may consider height limit bonuses in the Downtown, Program 8.B which will consider allowing multi-family dwellings in mixed use projects in the Downtown Core Retail and Downtown Core Business Districts, Program 9.A to facilitate development at housing sites in the Downtown, and Program 9.B which would amend the Downtown Specific Plan to include an AHO designation on Site 4. Section 3.9, Land Use, analyzes the proposed project's potential to conflict with an applicable land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect, including the Downtown Specific Plan.

Zoning Ordinance

The City of Novato Municipal Code, Chapter 19, Zoning, implements the land use policies of the Novato General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. The Housing Element includes programs to encourage housing consistent with existing zoning provisions, as described in Table 2.0-1. The Housing Element also includes programs that would modify or consider modification of the Zoning Ordinance including Programs 3.A, 3.B, 4.A, 5.J, 6.B, 6.C, 7.A, 7.C, 7.E, 8.A, 8.B, 9.A, 9.B, 9.E, 11.A, 12.A, 12.D, and 12.E, which are described in Table 2.0-1. Section 3.9, Land Use, analyzes the proposed project's potential to conflict with an applicable land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect, including the Zoning Ordinance.

2.6 USES OF THE EIR AND REQUIRED AGENCY APPROVALS

This EIR may be used for the following direct and indirect approvals and permits associated with adoption and implementation of the proposed project.

CITY OF NOVATO

Project Approval

The City is the lead agency for the proposed project. The proposed project will be presented to City Council for comment, review, and recommendations. The City Council has the sole discretionary authority to approve the proposed project. In order to approve the proposed project, the City Council would consider the following actions:

- Certification of the Environmental Impact Report;
- Amendment of the General Plan adopting the update to the Housing Element;

- Amendment of the General Plan text and Land Use Map, the Downtown Specific Plan text and map, Zoning Code text, and Zoning Map to implement Program 9.B;
- Amendment of the Zoning Code text to implement Program 9.E; and
- Amendment of the Hamilton/Ignacio Industrial Park Master Plan and Precise Development Plan to implement Program 12.A.

Subsequent Use

This EIR discloses environmental effects associated with implementation of the proposed project. When considering approval of subsequent activities under the proposed project, the City would utilize this EIR as the basis in determining potential environmental effects and the appropriate level of environmental review, if any, of a subsequent activity. As previously described, the City plans to adopt the Tier I programs, as listed in Table 2.0-1, immediately after adoption of the Housing Element. The City will consider the following subsequent activities to implement the proposed project:

- Amendments to the General Plan, Downtown Novato Specific Plan, Zoning Code, Municipal Code, and Development Standards to implement the Housing Element programs as described in Table 2.0-1.

OTHER GOVERNMENTAL AGENCY APPROVALS

After adoption, the updated Housing Element will be submitted to the State Department of Housing and Community Development for certification. Adoption and implementation of the Housing Element, including implementation of subsequent reasonably foreseeable actions, would not require any approvals or permits from other local, regional, state or federal agencies.

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Cities of Marin County

County Boundary

State Park

National Park

NOVATO HOUSING ELEMENT EIR

Figure 2.0-1: Project Location

N

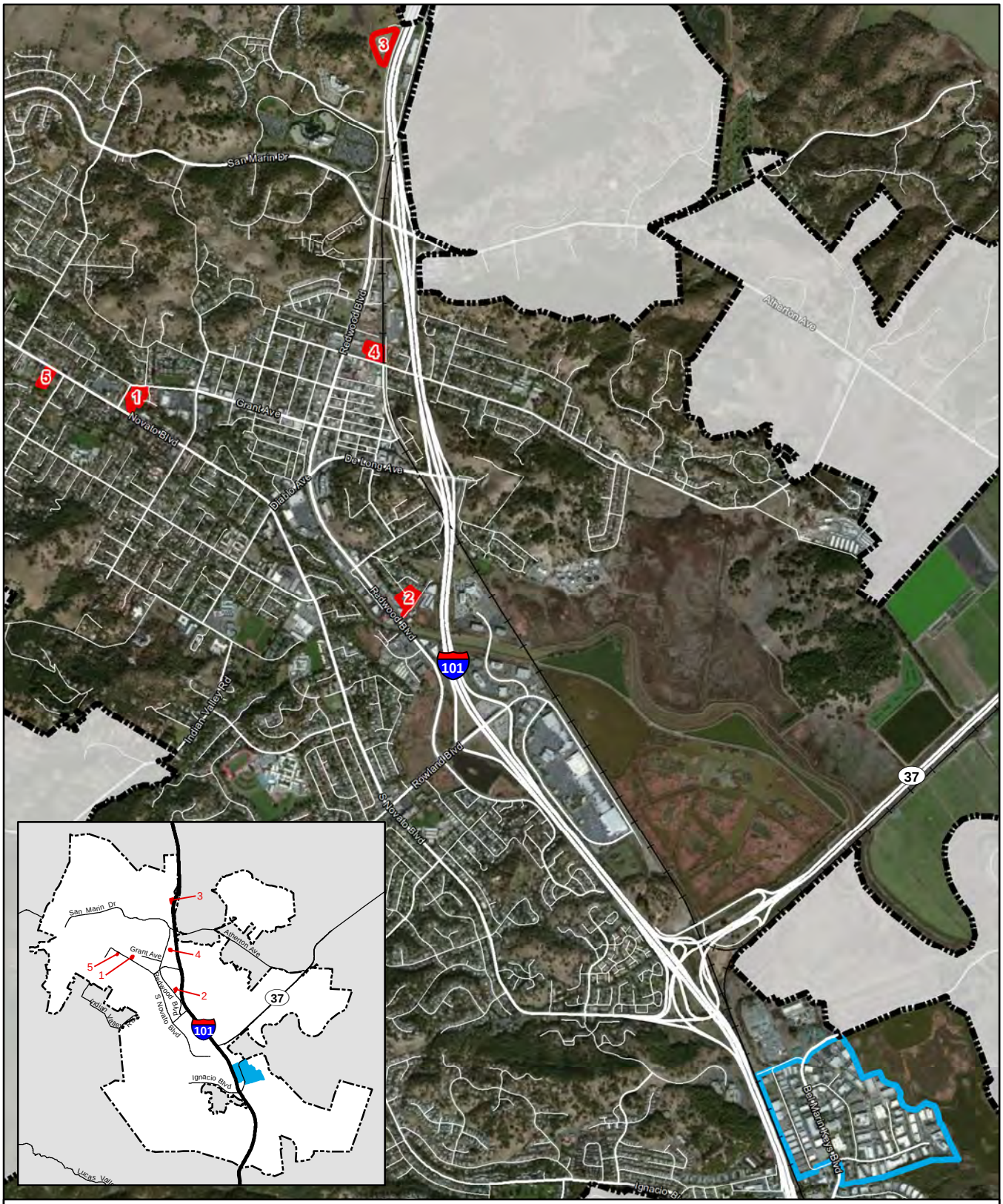
0 1 2 4

Miles

Data sources: Marin County GIS; California Spatial Information Library; ESRI StreetMap North America. Map date: June 18, 2013.

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm



NOVATO HOUSING ELEMENT EIR

Figure 2.0-2: Affordable Housing Overlay and Emergency Shelter Sites

Affordable Housing Overlay Sites

Hamilton and Ignacio Industrial Sites

Novato City Boundary

N 0 1,000 2,000 Feet

Data sources: Marin County GIS, ArcGIS Online Map Service, BING maps.
Map date: June 18, 2013.

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

This section provides an overview of the scenic resources, visual character and sources of light and glare that could be affected by development of the project, including those which may be encountered on the AHO sites and the surrounding area. Information in this section is based on information provided by the City of Novato, including the draft revised Housing Element, ground and aerial photographs, site visits, and the following reference documents: City of Novato *General Plan – Revision October 9, 2007* (City of Novato 2007), *Existing Conditions Report* (City of Novato 2009), and the City of Novato *Zoning Ordinance – Chapter 19 of the Novato Municipal Code* (City of Novato 2009), City of Novato *Downtown Specific Plan* (City of Novato 1998), and the *Officially Designated State Scenic Highways* (Caltrans 2013).

Comments received in response to the Notice of Preparation identified aesthetic issues related to lighting and building heights associated with Site 2 (Landing Court) and views from the Cobblestone neighborhood of Site 3 (Redwood Drive).

3.1.1 ENVIRONMENTAL SETTING

VISUAL CHARACTERISTICS

Novato is a suburban city surrounded by undeveloped hillsides and San Pablo Bay. The natural features surrounding the city contribute to Novato's identity, including ridgelines and hillsides that create a sense of enclosure for developed areas and establish physical boundaries. Novato's riparian corridors bring natural areas into urbanized neighborhoods. A significant amount of land is designated by the Novato General Plan as Open Space and Conservation. Open Space is the largest single land use designation in Novato's sphere of influence, making up approximately 8,383 acres, or 37 percent of the total land. Conservation designations occupy over 3,171 acres or approximately 14 percent of total land use in Novato (City of Novato 2009, p. 5-7).

Ridgelines and Other Scenic Resources

- Mt. Burdell is visible from Highway 101 and most areas north and west of Highway 37.
- Pinheiro Ridge functions as a ridge and upland greenbelt separator between the Atherton area and Gnoss Field.
- The Little Mountain and Verissimo Hills preserves form Novato's western border, behind the hilly neighborhoods on either side of Novato Boulevard.
- The steep hills of the Indian Valley, Ignacio Valley, Loma Verde and Pacheco Valley Opens Space Preserves form part of Novato's southwestern border.
- The Bay shoreline and plains, including Bel Marin Keys and Hamilton Wetlands, offer expansive scenic views from areas south of Highway 37 and east of Highway 101 east over the water.

Neighborhoods and Districts

The urbanized area of Novato is in a flat northwest-trending valley. Novato Creek, Vineyard Creek, Warner Creek and other tributaries flow southeast from the hills to the Bay. The five AHO sites and Hamilton and Ignacio Industrial Parks are located within broadly defined districts and neighborhood areas, shown in Figure 3.1-1. The districts and neighborhood areas within which the

AHO sites are located are described below. These descriptions are based on information contained in the Community Identity Element and Appendix A of the Novato General Plan and in the City of Novato Existing Conditions Report (which lists the noted areas as either "Neighborhoods" or "Districts" for ease of reference although no such titles have been formally adopted by the City).

Downtown District-The Downtown is a focal point of the city that is characterized primarily by one- and two-story buildings with tree-lined streets and pedestrian amenities. The area west of Redwood Boulevard contains many buildings that were built more than 100 years ago, a traditional mix of historic shops, offices, and older homes. Grant Avenue includes streetscape improvements. The east side of Redwood Boulevard transitions to a more contemporary character that is lined with gas stations, service shops and equipment rental shops with modern, utilitarian designs. New development in the Downtown is intensifying in both building height and dwelling units. Additional commercial development includes neighborhood shopping centers and large regional retail shopping centers along Highway 101 (City of Novato2009, pg. 5-5). Affordable Housing Overlay (AHO) Site 4 is located within the Downtown, east of Redwood Boulevard.

Industrial Park District- The Industrial Park District includes Ignacio, Hamilton, and Bel Marin Key Industrial parks. This area is a mix of light industrial, commercial, and office uses. Buildings are mostly single story and cover most of the lot. Building setbacks and architectural styles are diverse and range from symmetrical office buildings with glass and concrete exteriors, to wood-sided buildings with deep eaves and human scale windows and doors. Most of the buildings have a relatively plain, utilitarian design and each generally has its own parking lot. Most streets have sidewalks and landscaped areas of varying sizes (City of Novato 2009, pg. 5-18). As part of the proposed project, the master plan for the industrial park area, as it specifically relates to the Ignacio and Hamilton Industrial Parks, would be amended to principally permit emergency shelters and provide operational and design standards for such a use.

Buck Center District- The Buck Institute for Research on Aging complex is visible on the eastern slope of Mt. Burdell and is a landmark. The buildings are three to four stories constructed of smooth, light-colored stone exteriors with regularly-spaced windows and capped by jutting angular sky windows. Surface parking is located on the western side of the complex (City of Novato 2009, pg. 5-20). AHO Site 3 is located within this district.

Central Neighborhood- The Central neighborhood area wraps around Downtown. San Marin Drive forms the northern boundary, Highway 101 the eastern boundary, Arroyo Avichi Creek and the city limit the southern boundary and McClay Road and Simmons Lane the western boundary. The area is largely informed by its open space, including the surrounding hillsides and the riparian corridors along Novato and Warner Creeks. There are views of the surrounding hills in the northwest, southwest and east of the area. Focal points include the Novato Library, Lee Gerner Park, Lu Sutton Elementary School, Hill Middle School, Margaret Todd Senior Center and Marion and Stafford Grove Parks, as well as the Downtown Novato shopping center and Novato Fair shopping center. The northern part of the Central neighborhood area, north of Novato Boulevard and northwest of Downtown, is characterized by low density single family one-story homes of varied architectural style and form (City of Novato 2009, p. 5-20). AHO Site 1 is located in the northern part of this neighborhood.

West Neighborhood –The neighborhood is bounded by Novato Boulevard to the north, McClay Road to the east and the city limit to the west. Focal points in the neighborhood include Sinaloa Middle School, Pleasant Valley Elementary School, Stafford Lake Park, Miwok Park, Marin

Highlands Park, Novato Square Shopping Center, Novato Youth Center, and Indian Valley Golf Course. Novato, Wilson, and Warner Creeks extend through the district. Residential development is mainly single family one-story and two story homes. Residential development in the northern portions is denser than development in the south. The street network is curvilinear, with many streets terminating in cul-de-sacs (City of Novato 2009, p. 5-20). AHO Site 5 is located in this neighborhood.

Midwest Neighborhood- The neighborhood extends south from Arroyo Avichi Creek to the Anderson Rowe Open Space area, between Highway 101 on the east and the College of Marin campus on the west. Focal points of the area include Novato High School, Scottsdale Marsh, the College of Marin Indian Valley Campus, San Jose Middle School, Lynwood and Rancho Elementary Schools, Arroyo Avichi Park, the Redwood Boulevard Fire Station and the Nave shopping center. The mix of housing types includes single family houses, condominiums, townhouses and apartments. The majority of development in the flatlands of the area includes one and two story single family homes on smaller lots. The street pattern is curvilinear, orienting residences around large loops away from major arterials and collectors. The major thoroughfare is South Novato Boulevard, which provides north/south access along the eastern edge of the Neighborhood (City of Novato 2009, p. 5-15). AHO Site 2 is located in this neighborhood.

AFFORDABLE HOUSING OVERLAY AND HAMILTON/IGNACIO INDUSTRIAL PARK SITES

Site 1 (1787 Grant Avenue): AHO Site 1 is currently developed with a day care facility. There are two buildings and paved parking on the site. Novato Creek traverses the western and southern border of the site. The southern and western areas, as well large area in the central portion of the site, are undeveloped and provide lawn and playground space for the day care facility. The proposed project contemplates preservation of the well-vegetated Novato Creek corridor. The site is located in an urbanized area, with two-story condominiums to the east, and Novato Creek to the west and south and beyond medical and veterinarian facilities. Grant Avenue is to the north of the site, with two-story multi-family housing located across Grant Avenue.

Site 2 (Landing Court): AHO Site 2 is a paved lot that provides storage for an assortment of recreational vehicles, boats, and trucks. This site is bordered by a six foot tall fence topped with coiled barbed wire. A single-family residential neighborhood is located to the north and east of the site along Clausing Avenue and Clausing Court. These homes are single story. The Silver Penny RV Park and a 17-unit, two-story apartment complex are located to the west. Landing Court is south of the site. Development along Landing Court includes a light industrial/office complex and self-storage facilities located on the southern side of Landing Court.

Site 3 (Redwood Boulevard): AHO Site 3 is part of a larger 39.92 acre site. AHO Site 3 itself is undeveloped and is relatively flat and grassy. The land immediately west of the proposed AHO site is part of the same 39.92-acre parcel and is also vacant, featuring hillsides and stands of trees to the south, west, and north. Redwood Boulevard borders Site 3 to the east, with US 101 located east of Redwood Boulevard. Single family homes are located to the west in the Partridge Knolls II neighborhood, which is elevated above Site 3; the Buck Institute for Research on Aging which includes an approved, but yet to be constructed 130-unit multi-family development is to the northwest; and an office complex is to the south.

Site 4 (7506 Redwood Boulevard): AHO Site 4 is vacant and located in the downtown Novato area. There is commercial development to the west, undeveloped land to the north, railroad tracks and Railroad Avenue to the east, and commercial/light industrial development located

beyond Olive Avenue to the south. The site is occupied by a sizable soil stock pile, with a portion of the site being used as informal parking for employees of a nearby shopping center. The site is bordered by two drainage channels featuring aquatic vegetation, but does not otherwise contain any notable natural vegetation or trees.

Site 5 (1905 Novato Boulevard): AHO Site 5 is developed with a health services facility, including a surface parking lot. The site is almost fully covered by the footprint of health services building and its surface parking lot. Vineyard Creek runs along the western boundary of this site. The site is located in an urbanized area with nearby development consisting of a one- and two-story church facility, single-family residences, and an adjacent, undeveloped site that is assigned a single-family residential land use designation. To the north is Novato Boulevard and single-family residential development beyond.

Hamilton and Ignacio Industrial Parks: The Hamilton Industrial Park and the Ignacio Industrial Park are located next to each other in southeast Novato, east of Highway 101 (see Figure 2.0-2). Both industrial parks are accessed off of Bel Marin Keys Boulevard. Uses in the parks are primarily light industrial and office, with a few vacant parcels. North of these industrial parks is an electrical substation, other light industrial uses, and the Ignacio Wastewater Treatment Plant (pre-treatment and pumping station). Baylands and open space are to the east. Industrial uses and an open space area are located to the south. US Highway 101 is located to the west.

Scenic Highways

US Highway 101 and SR 37 are the principal routes through Novato. The California Department of Transportation State Scenic Highway System includes a list of highways eligible to become or designated as official scenic highways. The intent of the California Scenic Highway System is to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources. The segment of US 101 north of the intersection with SR 37 and SR 37 itself within the Novato city limits are both shown as eligible for State Scenic Highway status. However, neither of these segments has received official designation as a state scenic highway (Caltrans 2013).

Light and Glare

There are two typical types of light intrusion. First, light emanates from the interior of structures and passes out through windows. Secondly, light projects from exterior sources such as street lighting, security lighting, and landscape lighting. "Light spill" is typically defined as the presence of unwanted and/or misdirected light on properties adjacent to the property being illuminated.

Street lighting is provided within the developed areas of the City, either by the City or through private ownership. In new developments, the City itself does not install streetlights. Rather, the City requires developers to install lights and then turns maintenance and management over to the Marin Joint Powers Authority or the project HOA. Light introduction can be a nuisance to adjacent residential areas and diminish the view of the clear night sky, and, if uncontrolled, can disturb wildlife in natural habitat areas.

Glare is the sensation produced by luminance within the visual field that is significantly greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility.

AHO Sites 1, 2, 4, and 5 and the Hamilton and Ignacio Industrial Parks are in developed urban areas. Existing sources of light or glare include exterior lighting of nearby development and elevated streetlights and headlights from cars travelling on major streets, including Redwood and Novato Boulevards and US Highway 101. AHO Site 3 is undeveloped and located near US 101 at the northernmost portion of the City limits. Property in this area of the City is only partially developed with several large parcels of land, including AHO Site 3, currently in a non-urban use. Existing sources of light and glare at Site 3 include existing street lights located along the site's frontage with Redwood Boulevard, headlights from cars travelling on Redwood Boulevard and US Highway 101, and interior/exterior lighting associated with the residential units and the Buck Institute for Research on Aging to the west and northwest respectively.

3.1.2 REGULATORY SETTING

LOCAL

City of Novato General Plan

The City of Novato General Plan goals, objectives, policies, and programs applicable to environmental issues associated with aesthetics as it relates to the Project are summarized below.

LU Policy 5 Compatibility with Surroundings: Ensure that clustered development is compatible with the surrounding residential neighborhoods. Compatibility is to be determined by the appropriate City authority judging a development project, based on appearance, use characteristics, proximity, and other factors. Compatibility does not require, in the case of two residential neighborhoods, that housing type, lot size, or density be the same. Rather, visual conflict, interference with established use, and negative physical impacts are to be avoided.

CI Policy 1 Compatibility of Development with Surroundings: Ensure that new development is sensitive to the surrounding architecture, topography, landscaping, and to the character, scale, and ambiance of the surrounding neighborhood. Recognize that neighborhoods include community facilities needed by Novato residents as well as homes, and integrate facilities into neighborhoods.

CI Policy 6 Mixed Use Developments: Ensure that mixed use developments are well-designed aesthetically and functionally.

CI Policy 13 Lighting Design: Design guidelines for exterior lighting shall address security, appearance, and intensity. The guidelines shall specify the type lighting to be used to mitigate impacts on open space or other valuable City views.

CI Policy 25 Downtown Architectural and Landscape Design: Require attractive architectural and landscape design for all new developments as well as for expansion to existing uses, consistent with the *Downtown Specific Plan* guidelines that seek to improve the appearance and attractiveness of the Downtown by preserving the sense of place created by the traditional, small-town main street, while providing a safe, pedestrian-friendly atmosphere.

EN Map 3 identifies the location of scenic resources within and around the city. The AHO sites and Hamilton and Ignacio Industrial Parks are not designated as scenic resources on this map.

EN Policy 27 Scenic Resources: Protect visual values on hillsides, ridgelines, and other scenic resources.

Downtown Novato Specific Plan

Adopted in 1998, this Specific Plan identifies policies, programs, and improvements to revitalize Downtown Novato. The Specific Plan addresses elements of community identity such as architecture, site planning, circulation, landscaping, and many other facets of community identity. It includes guidelines assisting property owners and developers in creating projects consistent with the type of character the community would like to preserve in the Specific Plan area. Specifically, Section 5 of the Downtown Specific Plan provides guidelines for development and improvement of the properties within the Specific Plan area that are applied through the City's design review process. These guidelines address site planning (Urban Design Section 11.1), architecture (Urban Design Section 11.2), and landscaping (Urban Design Section 11.6) among other design topics. These guidelines are used to review new development projects in the Downtown Specific Plan area to help assure visual compatibility, quality site design, and attractive architecture. AHO Site 4 is located in the Downtown Specific Plan area.

City of Novato Zoning Ordinance

Through the Novato General Plan and Downtown Specific Plan, the City has established policies and clear expectations regarding aesthetics and design. The City of Novato Municipal Code, Chapter 19, Zoning, implements the policies of the Novato General Plan and Downtown Specific Plan, including preserving and enhancing the aesthetic quality of the city. The Zoning Ordinance has a direct effect on the aesthetic quality of the city because it defines and regulates, among other things, land uses, hillside preservation, building height, yard sizes, lighting, landscaping, signage, fences, public art and maintenance.

ZONING ORDINANCE

Article 2 of Chapter 19, expands upon the General Plan and Downtown Specific Plan standards by addressing the details of site planning and project design. The City has also adopted design review guidelines contained in Article 3 of Chapter 19, *Site Planning and General Development Standards,* which include specific design objectives that serve as standards by which staff and the Design Review Commission evaluate residential development. These standards are intended to ensure that all development is of desirable character, is compatible with existing and future development and protects neighboring properties.

Multi-Family Development (Zoning Code Divisions 19.10and 19.20 and Section 19.34.124): The Residential Zoning District Standards (Division 19.10) establish minimum lot size, maximum density, setbacks, allowed uses, building coverage, height, landscaping and parking requirements for all residential uses. The General Property Development and Use Standards (Section 19.20) specify requirements for access, fences and walls, site grading, height limits, screening, setbacks, scenic resource protection, solar access, and solid waste storage facilities. The Multi Family Development Standards (Section 19.34.124) address useable open space requirements, including the minimum amount of open space that must be available to and private for the occupants of each unit.

Multi-family design review (Zoning Code Section 19.42.030): Multi-family development is required to go through the City's design review process. The purpose of design review in terms of aesthetics is to focus on community character and aesthetics, encourage imaginative solutions and

high-quality urban design, ensure that new uses and structures are compatible with surrounding neighborhoods, and to retain and strengthen the visual quality of the community. Zoning Code Section 19.42.030 provides general design criteria that are used by the City when considering applications for new development subject to design review. The design criteria address a wide range of aesthetic and design issues, including: height and bulk of buildings, site layout, site access, landscaping, orientation to natural amenities and scenic views, the architectural design of building facades and rooflines, the location of windows, doorways and outdoor use areas, and the use of exterior lighting, chimneys, and other elements of project design.

Hillside and Ridgeline Protection (Zoning Code Division 19.26): This division was adopted to protect views of hillsides and ridgelines, which are a key component of the city's identity. It limits grading and development in hillside areas. When development does occur, the Hillside Ordinance requires a detailed design review process to ensure that new buildings are designed to respond appropriately to their hillside setting. Residential densities are reduced based on the steepness of slopes on a given site. New buildings must be designed to blend with the terrain and must not extend above ridgelines. They must be painted in earth tones and screened by landscaping or natural topography. Building pads must be sited to minimize the need for grading or retaining walls and maximize the preservation of existing trees.

Landscaping Standards (Zoning Code Division 19.28): This division establishes landscaping standards to mitigate the effects of urbanization on the environment and to provide for an aesthetically pleasing urban setting with sufficient outdoor use areas. This division encourages use of drought-tolerant plant materials and water-conserving automatic irrigation systems.

Light and Glare (Zoning Code Section 19.22.060): This section requires that light or glare from interior or exterior lighting, mechanical or chemical processes, or from reflective materials used or stored on a site shall be shielded or modified to prevent emission of light or glare beyond the property line. Exterior lights must be placed to eliminate spillover illumination or glare onto adjoining properties to the maximum extent feasible, and not interfere with the normal operation or enjoyment of adjoining properties.

Parking Design Standards (Zoning Code Section 19.30.70): This section requires lighting in parking areas to be energy-efficient and in scale with the height and use of the on-site buildings. All illumination, including security lighting, is to be directed downward, away from adjacent properties and public rights-of-way. Placement of lighting shall take into account the location and expected mature characteristics of on-site landscape materials. This section also includes landscaping standards that are applied to new development in addition to those landscaping requirements specified in Zoning Code Division 19.28 described above.

Waterway and Riparian Protection (Zoning Code Division 19.35): This division provides standards for the protection, maintenance, enhancement and restoration of streams and waterways. Development is permitted that is compatible with the physical, habitat, aesthetic, and recreational functions of waterways. A stream protection zone shall be established, which shall include the stream bed, the stream banks, all riparian vegetation and an upland buffer zone at least 50 feet wide, measured from the top of the channel bank. Development activities within the 50-foot stream protection zone are subject to securing a use permit and developing a stream management plan, unless application of the stream protection zone is precluded by development conditions upstream and downstream of a given site or where a qualified public agency (e.g., flood control

district) owns, manages, and maintains the watercourse and a lesser buffer area is deemed adequate.

Woodland and Tree Preservation (Zoning Code Division 19.39): provides for the conservation and regeneration of native trees, woodlands and forests on both public and private land during development.

3.1.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have significant impact on aesthetics if it will:

- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

IMPACTS AND MITIGATION MEASURES

Impact 3.1-1: Potential to substantially degrade the existing visual character or quality of the site and its surroundings (Less than Significant)

A main objective of the Housing Element is to encourage development of a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs contained in the Draft Housing Element to assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would, for the most part, be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development.

Many of the programs in the Housing Element will not affect visual character, including programs that commit the City to considering various housing related issues, but do not require any specific action (HO Programs 4.A, 5.D, 5.F, 5.I, 5.J, 6.B, 6.C, 7.A, 7.E, 7.F, 8.B, 9.A, 9.C, 9.D, 11.A, 14.A, 14.B, 15.A, and 15.B), programs for continued implementation of adopted or existing standards and regulations (HO Programs 2.A, 2.B, 4.B, 5.B, 5.K, 8.A, 9.D, and 11.A), programs involving City processing of housing projects (9.F, 9.G, 9.H, 9.I, 12.C, and 13.A), programs involving coordination with various agencies, organizations, and property owners (HO Programs 1.B, 1.C, 5.E, 5.G, 5.H, 6.A, 7.B, 7.D, 10.A, 12.B, 13.B, and 14.C), programs that affect management of housing (HO Program 5.A), and programs involving outreach and the dissemination of information regarding housing issues (HO Programs 1.A, 5.C, 5.G, 7.F, and 13.C).

While some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts(Program 12.D), and identifying farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Chapter 2.0, these programs would not change the location of allowed urban uses or significantly increase the intensity of future development and thus would not have the potential to substantially degrade the existing visual character of the site and its surroundings.

The following Housing Element programs contemplate specific actions that would accommodate increased development densities and intensities potentially having an effect on the visual character of the five AHO sites. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an Affordable Housing Overlay district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (30 units per acre) for senior housing on the five AHO sites. Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks.

The potential to substantially degrade the existing visual character or quality of the AHO sites and emergency shelter site and their surroundings is discussed below.

While no specific development projects are proposed at this time, subsequent multi-family development on the five AHO sites, in accordance with Programs 9.B and 9.E, would represent a change to the current and planned visual character of these sites. Site 1 is currently designated for medium density multi-family residential, Sites 2 and 4 are designated for commercial use, Site 3 is designated for business professional and office uses, and Site 5 is designated for low density residential use.

Site 1 (1787 Grant Avenue) is currently developed with a day care center featuring two single-story buildings, a surface parking lot, lawn area, and a playground area. The west and south sides of the Site 1 are traversed by Novato Creek, which features native tree cover and other riparian corridor vegetation. Views of Site 1 are available from an existing two-story condominium complex to the east, from Grant Avenue, and a two-story apartment complex on the north side of Grant Avenue. Views of the site from west and south are screened by the existing vegetation along Novato Creek. The site and its surroundings are considered to be urbanized.

Development of AHO Site 1 (1787 Grant Avenue) with multi-family uses would likely require the demolition of the existing day care facilities that occupy this site. A future multi-family residential project could involve the construction of one or more apartment buildings and associated garage/carport and parking areas pursuant to the development standards of the draft AHO District, which requires minimum setbacks as outlined therein, limits lot coverage to 40%, and imposes a height limit of 35 feet among other provisions. In addition, Program 9.B of the draft Housing Element establishes a provision specifying that future development on Site 1 shall maintain a minimum 20-foot setback from the top of bank of Novato Creek. This program requirement is intended to respect existing flood control and access easements held by the Marin County Flood Control and Water Conservation District that cross Site 1 and to buffer the riparian habitat along Novato Creek from future development. New development would require design review pursuant to Section 19.42.030 of the Novato Zoning Code. In addition, given the location of

Novato Creek, the provisions of the City's Waterway and Riparian Protection Standards (Zoning Code Division 19.35) would apply to the new development at Site 1. There is also a possibility, the City's Wetland Protection and Restoration Ordinance (Zoning Code Division 19.36) could apply to new development at Site 1 assuming jurisdictional wetland features are delineated on-site.

The combination of the requirements of Program 9.B, the procedures of the City's design review process, and the standards of Division 19.35 and potentially Division 19.36 would address the design and location of a new development on Site 1 to ensure design compatibility with surrounding development and preservation of the riparian corridor along Novato Creek.

Development of Site 1 with a multi-family residential project as generally described above would not substantially degrade the existing visual character or quality of this site or its surroundings, recognizing this site is currently developed and surrounded by other urban development. Site 1 is and would remain a site that is visually characterized as being developed with structures bordered by a riparian corridor. Furthermore, a project that is found to be consistent with the General Plan policies noted earlier, the requirements of Housing Element Program 9.B, the development standards of the draft AHO District, the standards of Division 19.35 and possibly Division 19.36, and the guidelines and findings required by the City's Design Review process as described in Zoning Ordinance Section 19.42.030 would not result in a project that would substantially degrade the visual character or quality of Site 1 or its surrounding, urbanized area.

Based on the observations above, the future development of a multi-family residential project at Site 1 would have a **less than significant** impact on visual character and quality.

Site 2 (Landing Court) is currently paved and used for the storage of recreational vehicles. The visual character and quality of Site 2 is that of 2.11-acre paved parking lot that is occupied by stored recreational vehicles and solid fencing topped with barbed wire. The visual character and quality of the area surrounding Site 2 is defined by urban development, including public streets, a two-story apartment building, an RV park, light industrial office/self-storage facilities, and one story single-family residences located on Clausing Avenue and Clausing Court.

Development of AHO Site 2 (Landing Court) would involve construction of one or more residential buildings and associated garage/carport and parking areas pursuant to the requirements of Housing Element Program 9.B and the development standards of the draft AHO District. The AHO District includes a specific set of standards for Site 2, requiring minimum setbacks as follows:

Front setback: 20-feet.

Rear setback: 20-feet.

Side (each) setback:

20 – feet for any dwelling unit regardless of height and any structure (not a dwelling unit) over 20 feet in height when abutting a single family residential zoning district.

10 feet for any structure (not a dwelling unit) over 12 feet in height up to 20 feet in height when abutting a single family residential zoning district

6-feet for any structure (not a dwelling unit) 12-feet in height or lower, where abutting a single family residential zoning district.

10 -feet for any dwelling unit or other structure 20 feet in height or greater where not abutting a single family residential zoning district.

6- feet for any dwelling unit or other structure less than 20 feet in height where not abutting a single family residential zoning district.

These specific setback requirements are applied to Site 2 to assure that future multi-family residential development is of a mass and scale that is complimentary to and compatible with the noted single-family residences. Additional development standards in the draft AHO District, include maximum lot coverage and height limits among other standards. In addition, new development on Site 2 would be subject to the City's design review process pursuant to Zoning Code Section 19.42.030. This process would address the site design, architecture, and landscaping proposed for a new project from the perspective of the site's visual character and compatibility with the surrounding pattern of development. Development of Site 2 with a multi-family residential project as generally described above would not substantially degrade the existing visual character or quality of this site or its surroundings, recognizing this site and its surroundings are developed with urban uses and buildings. Site 2 is and would remain under project conditions a site that is visually characterized by urban uses and buildings. As discussed above, a future project at Site 2 would be subject to applicable design policies of the General Plan as noted above, , the development standards of the draft AHO District, and the City's design review process. A future project found to be consistent with these policies, standards, and the findings necessary to grant a design review approval would not be considered to substantially degrade the existing visual quality or character of Site 2 or that of its surroundings. Based on these observations, the future development of a multi-family residential project at Site 2 would have a **less than significant** impact on visual character and quality.

During the public scoping session for this EIR, residents of the Clausing Avenue neighborhood expressed concern about the location, height, and design compatibility of a future project at Site 2. Since project level plans are not available at this time, this EIR cannot address the potential visual character or quality implications of a specific residential design. Ultimately, this EIR, as a program level document, cannot resolve neighborhood compatibility issues that are best left to consider when an actual project proposal is reviewed through the City's design review process. The City's design review process is the appropriate mechanism to consider the policy issues regarding project design and associated neighborhood compatibility.

Site 3 (Redwood Boulevard) is a 4-acre area of a larger 39.92-acre parcel. Site 3 is relatively flat and hosts a single oak tree, but is surrounded by hills and ridgelines with native tree cover, grassland, and natural drainage courses. Site 3 and its larger surrounding parcel are best characterized as being rural in appearance. Views of Site 3 are available from Redwood Boulevard and U.S. 101 to the east, the Buck Center for Research on Aging to the northwest, a lone single-family residence to the north, and approximately twelve single family residences located in the Partridge Knolls neighborhood. These particular single family homes are located approximately 1,300 feet from and 110-feet in elevation above Site 3.

Development of AHO Site 3 would involve construction of one or more residential buildings pursuant to the development standards of the draft AHO District. This development would likely take the form of multi-story buildings of up to 35-feet in height and include associated garage/carport and parking areas. This development would change the visual character of Site 3 from a rural to urban appearance. However, the remainder of the parcel within which Site 3 sits would retain its rural character. This development would visible from the locations noted above, but would not obstruct views of the wetlands and open space lands east of US 101. Similarly the upper reaches of the undeveloped land surrounding Site 3 and Mt. Burdell to the northwest would remain visible from Redwood Boulevard and US 101.

New development on Site 3 would be subject to the development standards of the draft AHO District, as well as require design review pursuant to Section 19.42.030 of the Novato Zoning Code. In addition, given that Site 3 is likely within 50-feet of a jurisdictional wetland, the provisions of the City's Wetland Protection and Restoration Ordinance (Zoning Code Division 19.36) would apply to new development at this site. The design review process coupled with the standards of the Division 19.36 would address the design and location of a new development on Site 3 and ensure design compatibility with the rural visual character of the land surrounding this site, as well the potential jurisdictional wetlands adjacent to the site.

Although new development at Site 3 would change the visual character of this site by introducing new development to the currently substantially undeveloped site, this change is not considered to substantially degrade the visual character of the site or its surroundings. Site 3, in a developed condition, would appear to be a relatively small residential project in a semi-rural setting. Future development on Site 3 would be reviewed against the visual policies of the General Plan, the development standards of the draft AHO District, the standards of Zoning Code Division 19.36, and the guidelines and findings required by the City's Design Review process as described in Zoning Ordinance Section 19.42.030. Site 3 has been specifically located in an area of the overall parcel that is at the lower elevations of the overall site and close to the existing roadways and utilities and avoids significant stands of trees and other components of the larger site, including steep slopes and knolls, that establish the existing rural visual character of the site and its surroundings. In addition, development of Site 3 will not impede views of Mt. Burdell, the surrounding natural features on the larger site or the Rush Creek Open Space preserve to the east of U.S. 101.

Based on the observations above, the future development of a multi-family residential project at Site 3 would have a **less than significant** impact on visual character and quality.

Site 4 (Redwood Boulevard) is located in downtown Novato an area characterized primarily by commercial development with residential development at its periphery. The site is occupied by a sizable soil stock pile, with a portion of the site being used as informal parking for employees of a nearby shopping center. The site is bordered by two drainage channels featuring aquatic vegetation, but does not otherwise contain any notable natural vegetation or trees. Views of Site 4 are available from Redwood Boulevard and Olive Avenue from the commercial buildings fronting thereon, the existing commercial building hosting Trader Joe's to the west, a vacant parcel to the north, and single/multi-family residences at the intersection of Olive Avenue and Railroad Avenue.

Development of Site 4, similar to the other sites, would involve the construction of one or more residential buildings pursuant to the development standards of the draft AHO District. New development would require design review pursuant to Section 19.42.030 of the Novato Zoning Code, which would address a future project's site design, landscaping, and architecture from the

perspective of the visual character and compatibility with surrounding development. In addition, there is a possibility, the City's Wetland Protection and Restoration Ordinance (Zoning Code Division 19.36) could apply to new development at Site 4 assuming jurisdictional wetland features are delineated. If applicable, Division 19.36 could affect the location of new development relative to any jurisdictional wetland feature delineated at Site 4.

Development of Site 4 with a multi-family residential project as generally described above would not substantially degrade the existing visual character or quality of this site or its surroundings, recognizing this site lies within downtown Novato and is surrounded by other urban development. Site 4 is and would remain a site that is visually characterized as being urbanized. Furthermore, a project that is found to be consistent with the visual policies of the General Plan noted earlier, the development standards of the draft AHO District, and possibly the standards of Zoning Code Division 19.36, and the guidelines and findings required by the City's Design Review process as described in Zoning Ordinance Section 19.42.030 would not result in a project that would substantially degrade the visual character or quality of Site 4 or its surrounding, urbanized area.

Based on the observations above, the future development of a multi-family residential project at Site 4 would have a **less than significant** impact on visual character and quality.

Site 5 (1905 Redwood Boulevard) is developed with a health services facility, including a paved parking lot. The site is almost fully covered by the footprint of the health services building and its surface parking lot. Vineyard Creek runs along the western boundary of this site and features various native trees and riparian vegetation. Views of the site are available from an existing two-story church to the north, a vacant residential property to the south, Novato Boulevard, and several single-family homes on the east side of Novato Boulevard. Views of the site from the west are largely screened by the trees and vegetation along Vineyard Creek. Site 5 and its surroundings are visually characterized as being urban.

Development of Site 5 would likely involve the demolition of the existing health services facility thereon and construction of one or more residential buildings pursuant to the development standards of the draft AHO District, which requires minimum setbacks as specified therein, limits lot coverage to 40%, and imposes a height limit of 35-feet among other provisions. New development would require design review pursuant to Section 19.42.030 of the Novato Zoning Code. In addition, given the location of Vineyard Creek, the provisions of Zoning Code Division 19.35, Waterway and Riparian Protection, and possibly the standards of Division 19.36, Wetland Protection and Restoration, would apply to new development at Site 4. Division 19.35 establishes a stream protection zone of 50-feet, except in limited circumstances, which is intended to buffer waterways and associated riparian habitat from development. Division 19.36 establishes a 50-foot buffer, except in limited circumstances for new development near delineated wetlands.

Development of Site 5 with a multi-family residential project as generally described above would not substantially degrade the existing visual character or quality of this site or its surroundings, recognizing the site is currently developed and is surrounded by other urban structures. Site 5 under project conditions would remain a site that is visually characterized as being urbanized. Future development on Site 5 would be reviewed against the visual policies of the General Plan, the development standards of the draft AHO District, the standards of Zoning Code Division 19.35 and possibly Division 19.36, and the guidelines and findings required by the City's Design Review process as described in Zoning Ordinance Section 19.42.030. A project conforming to these legislative policies, standards, and review procedures would not be considered to result in

development that would substantially degrade the visual character or quality of Site 5 or its surrounding urbanized area.

Based on the observations above, the future development of a multi-family residential project at Site 5 would have a **less than significant** impact on visual character and quality.

HO Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks. The shelters are likely to occupy existing buildings but in the event a new building is constructed, HO Program 12.A specifies that development of emergency shelters would be subject to the current development standards in the LIO zone except that additional standards to be adopted would establish specific parking requirements, security lighting standards, and specify the size and location of exterior client waiting areas. Adherence to the current development standards with these minor exceptions will ensure no change to the visual character of the industrial park.

At the public scoping session conducted for this EIR, numerous comments were made regarding the compatibility of future development with surrounding buildings and uses from the perspective of setbacks, height, and massing. These particular issues are not directly relevant to the visual character thresholds established by CEQA. As such, the matter of design compatibility between uses and buildings is not analyzed. Nonetheless, it is worthwhile and informative to note that implementation of the City's General Plan policies, design guidelines, development standards, and design review procedures address neighborhood compatibility issues. For reference, the following policies and standards of the General Plan, the Zoning Ordinance, and the draft Housing Element address the future compatibility of a new multi-family residential development at the AHO sites:

AHO Sites 1 through 5 would be subject to the following design compatibility policies of the General Plan:

- General Plan Policy CI.1 calls for development to be compatible with surrounding architecture, character, scale and ambiance of the surrounding neighborhood including nearby community facilities as well as homes.

- Programs CI 1.1 and 1.2 call for Design Review to address aesthetic values including scale and massing, colors, exterior materials, roof styles, lighting and landscaping to ensure compatibility with surrounding land uses, particularly in residential neighborhoods. However, the General Plan specifies that compatibility does not require that residential densities and building types be identical on adjoining properties, just that new development fit in harmoniously with its surroundings.

- Policy CI.6 and Program 6.1 applies similar standards for compatibility to mixed-use development.

Draft Housing Element Program 9.B applies a specific setback requirement to AHO Site 1. Specifically, Program 9.B requires new development at Site 1 to maintain a minimum setback of 20-feet from the top of bank of Novato Creek. This setback is intended to buffer the riparian habitat along Novato Creek from disturbance, as well as respect existing access and food control easements held by the Marin County Flood Control and Water Conservation District.

The AHO District includes a specific set of standards for Site 2, requiring minimum setbacks as follows:

Front setback: 20-feet.

Rear setback: 20-feet.

Side (each) setback:

20 – feet for any dwelling unit regardless of height and any structure (not a dwelling unit) over 20 feet in height when abutting a single family residential zoning district.

10 feet for any structure (not a dwelling unit) over 12 feet in height up to 20 feet in height when abutting a single family residential zoning district

6-feet for any structure (not a dwelling unit) 12-feet in height or lower, where abutting a single family residential zoning district.

10 -feet for any dwelling unit or other structure 20 feet in height or greater where not abutting a single family residential zoning district.

6- feet for any dwelling unit or other structure less than 20 feet in height where not abutting a single family residential zoning district.

AHO Site 4 (7506 Redwood Boulevard) is located within the Downtown Overlay District. As such, the General Plan Community Identity Policy 25 would apply to this site. This policy calls for development to be subject to adopted architectural and landscape design standards contained within the Downtown Specific Plan guidelines that seek to improve the appearance of the Downtown. The Downtown Specific Plan provides guidelines addressing site design(Section UD 11.1), architecture (Section UD 11.2), and landscaping (UD 11.6) among other design related topics. The draft AHO District for multi-family development at Sites 1 through 5 establishes, setbacks, building coverage, maximum height limit, open space requirements, and parking requirements for all residential uses. The General Property Development and Use Standards of the Zoning Code (Article 3) would apply to the AHO sites, specifying requirements for access, fences and walls, site grading, height limits, screening, and solid waste storage facilities among other requirements. Similarly, the landscape standards of the Zoning Code Section 19.28 would apply to the AHO sites.

Draft Housing Element HO Program 3.A directs the city to adopt Multi-family Housing Design Criteria to be applied during the Design Review process to multi-family developments proposed for the AHO sites, and any other designated multi-family sites. These criteria would be added to the Zoning Code and are intended to establish consistent design guidelines for multi-family housing proposals. The design guidelines will address: context with surroundings, site planning, building massing and layout, height transitions, architecture and materials, landscape design, open space, site coverage, setbacks, outdoor lighting, and density compatibility provisions including transition criteria to encourage compatibility when structures are proposed near single family residential buildings on adjoining properties. The new HO Program 3.A criteria are intended to reflect the existing multi-family residential standards contained in the Novato Zoning Code and would add further definition and refinement to aide in interpretation of the General Plan requirements with respect to visual character and neighborhood compatibility.

Draft Housing Element HO Program 3B directs the city to adopt modifications to the parking standards for infill, transit-oriented, mixed-use, and accessory structures. These measures would permit parking to be reduced which would allow less of a building site to be devoted to parking. For surface parking areas this would result in a positive visual condition in that more of the site could be devoted to open space and landscaping.

As described above, the project will result in a **less than significant** impact with respect to substantially degrading the existing visual character or quality of the site and its surroundings.

Impact 3.1-2: Potential to have substantial adverse effect on a scenic vista or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway (Less than Significant)

Implementation of the revised Housing Element would potentially result in construction of new residential developments and reuse of some existing structures for a variety of housing types. The location of these potential projects is not known at this time, except that they will occur on properties already designated in the General Plan and zoned for residential or mixed-use development or on the proposed AHO sites. Development of large residential or mixed use complexes, particularly multi-story buildings, has the potential to obstruct public views of scenic resources.

The Novato General Plan clearly identifies those scenic resources that are considered important to the community, including views of Mount Burdell, hillsides, ridgelines, baylands, and bayshore. None of the AHO sites or emergency shelter sites are located within a scenic resource area as mapped on General Plan Map EN 3, Scenic Resources. Development of Sites 1, 2, 3, 4, and 5, and within the Hamilton and Ignacio Industrial Parks would not have a significant effect on a designated scenic resource. None of the AHO or the Hamilton and Ignacio Industrial Parks are located along a state designated scenic highway.

During the public scoping session conducted for this EIR, comments were received from residents of the Partridge Knolls neighborhood concerning the disruption of scenic views from the residences on Cobblestone Drive. The residences on Cobblestone Drive are approximately 1,300 feet west of Site 3. These homes are approximately 110-feet in elevation above Site 3. Views from these homes looking east overlook Site 3, U.S. Highway 101, existing two-story commercial buildings along Rush Landing Road, and the wetlands and oak covered slopes of the Rush Creek Open Space Preserve. The view from Cobblestone Drive would be considered to represent a scenic vista with respect to the visibility of the undeveloped wetlands and slopes of the Rush Creek Open Space Preserve, which are identified on General Plan EN Map 3 as scenic resources. Future development of a multi-family residential project at Site 3 would not obstruct views of the wetlands and slopes of the Rush Creek Open Space Preserve from Cobblestone Drive since the homes on this street are significantly elevated above Site 3. As such, viewers would be able to look over development at Site 3 and have site lines into the Rush Creek Open Space Preserve and the bay lands beyond. In addition, future development on Site 3 would not obstruct views of Mt. Burdell and the surrounding natural areas from Redwood Boulevard and U.S. 101.

Based on the observations above, the project would have a **less than significant** impact with respect to having a substantial adverse effect on a scenic vista and would have **no impact** with regard to substantially damaging scenic resources within a state scenic highway

Impact 3.1-3: Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (Less than Significant)

Many of the programs in the Housing Element will not result in physical effects on the environment that would create new sources of substantial light or glare which would adversely affect day or nighttime views in Novato; these programs include the programs described under Impact 3.1-1 that will not affect visual character.

Some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts(Program 12.D), and identifying farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Chapter 2.0. However, these programs would not change the location of allowed urban uses or significantly increase the allowed intensity of future development and would be required to comply with the applicable General Plan and zoning requirements discussed below. Thus, these programs would not have the potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The following Housing Element programs contemplate specific actions that would accommodate new or increased development densities and intensities that could create new sources of light and glare which may affect day or nighttime views in the area. Program 9.A would result in General Plan amendments, rezoning, and other facilitation steps, as described in Chapter 2.0, to facilitate housing development on the five AHO sites. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an Affordable Housing Overlay district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (30 units per acre) for senior housing on the five AHO sites. Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks.

The potential of the AHO sites and emergency shelter site to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area is discussed below.

The emergency shelter use that would become a permitted use in the Hamilton and Ignacio Industrial parks would introduce a new permitted use in this area but the shelters are likely to occupy existing buildings or in the event a new building is constructed, HO Program 12.A would subject development to the current development standards in the LIO zone except that additional standards to be adopted would establish parking requirements, security lighting standards, and specify the size and location of exterior client waiting areas. Such lighting standards would comply with the applicable General Plan policies and zoning code sections addressing light and glare described below.

The AHO designation would allow AHO Sites 1 through 5 to be developed with multi-family residential uses, although no specific development projects have yet been proposed. Development of large multi-family residential or mixed-use complexes has the potential to result in new sources of daytime glare from reflective building materials and vehicle headlights in parking

areas. Security lighting in parking areas and around buildings has the potential to result in light trespass on adjacent properties and adds to light pollution "sky glow" in night skies.

AHO Sites 1, 2, 4, and 5 and the Hamilton and Ignacio Industrial Parks are in developed urban areas. Existing sources of light or glare include exterior lighting of nearby development and elevated streetlights and headlights from cars travelling on major streets, including Redwood and Novato Boulevards and US Highway 101. AHO Site 3 is undeveloped and located near US 101 at the northernmost portion of the City limits. Property in this area of the City is only partially developed with several large parcels of land, including AHO Site 3, currently in non-urban use. Existing sources of light and glare at Site 3 include existing street lights located along the site's frontage with Redwood Boulevard, headlights from cars travelling on Redwood Boulevard and US Highway 101, and interior/exterior lighting associated with the residential units and Buck Institute for Research on Aging located to the west and northwest respectively. Future development of the five AHO sites is not anticipated to result in substantial light or glare recognizing these sites are located in areas that are currently exposed to light and glare from existing buildings and light associated with vehicle traffic and will be subject to the General Plan and zoning requirements described below. Future development at the AHO sites would be subject to design review as specified in Section 19.42.030 of the Novato Zoning Code. This review would include a project specific analysis of lighting design, fixture types, and building surface materials to prevent light intrusion and glare, consistent with the following policies of the Novato General Plan, standards of the Novato Zoning Code, and proposed programs of the draft Housing Element itself:

General Plan Policy CI.1 calls for development to be compatible with the ambiance of the surrounding neighborhood. Programs CI 1.1 and 1.2 call for Design Review to address aesthetic values including exterior materials, lighting and landscaping to ensure compatibility with surrounding land uses, particularly in residential neighborhoods. Policy CI.6 and Program 6.1 applies similar standards for compatibility to mixed-use development. CI Program 12.1 pertains to parking lots and requires that glare from headlights not have an adverse impact on adjacent land uses. CI Policy 13 calls for design guidelines for exterior lighting to address appearance and intensity and to avoid impacts to open space or other city views.

Zoning Code Section 19.22.060 requires that light or glare from interior or exterior lighting, mechanical or chemical processes, or from reflective materials used or stored on a site shall be shielded or modified to prevent emission of light or glare beyond the property line. This section requires that exterior lights must be placed to eliminate spillover illumination or glare onto adjoining properties to the maximum extent feasible, and not interfere with the normal operation or enjoyment of adjoining properties.

Zoning Code Section 19.30.070 addresses lighting in parking areas and requires lighting to be in scale with the height and use of the buildings. All lighting is to be directed downward, away from adjacent properties and public roads.

Draft Housing Element HO Program 3.A directs the city to adopt Multi-family Housing Design Criteria to be applied during the Design Review process to multi-family developments proposed for the AHO sites, and any other designated multi-family sites. The design criteria may include: building layout and materials, landscape design, open space, site coverage, setbacks, and outdoor lighting. These standards are especially intended to encourage compatibility when structures are proposed near sensitive single family residential buildings on adjoining properties. The new HO Program 3.A criteria are intended to add further definition and refinement to aide in

interpretation of the General Plan and zoning requirements with respect to light and glare and neighborhood compatibility.

Application of the design review process to new multi-family residential development, adherence to the current development standards, including applicable Zoning Code sections, and achieving consistency with the noted General Plan policies will ensure building materials are not reflective and do not cause daytime glare and that exterior lighting is shielded to direct light downward and not trespass onto adjacent properties or contribute to nighttime light pollution. These uniform and mandatory requirements ensure that new residential development will have a **less than significant** impact with respect to nighttime light pollution, light and glare, and neighborhood compatibility with respect to light and glare.

REFERENCES

Caltrans 2013. *Officially Designated State Scenic Highways*. Available at: http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm. Accessed: May 30, 2013.

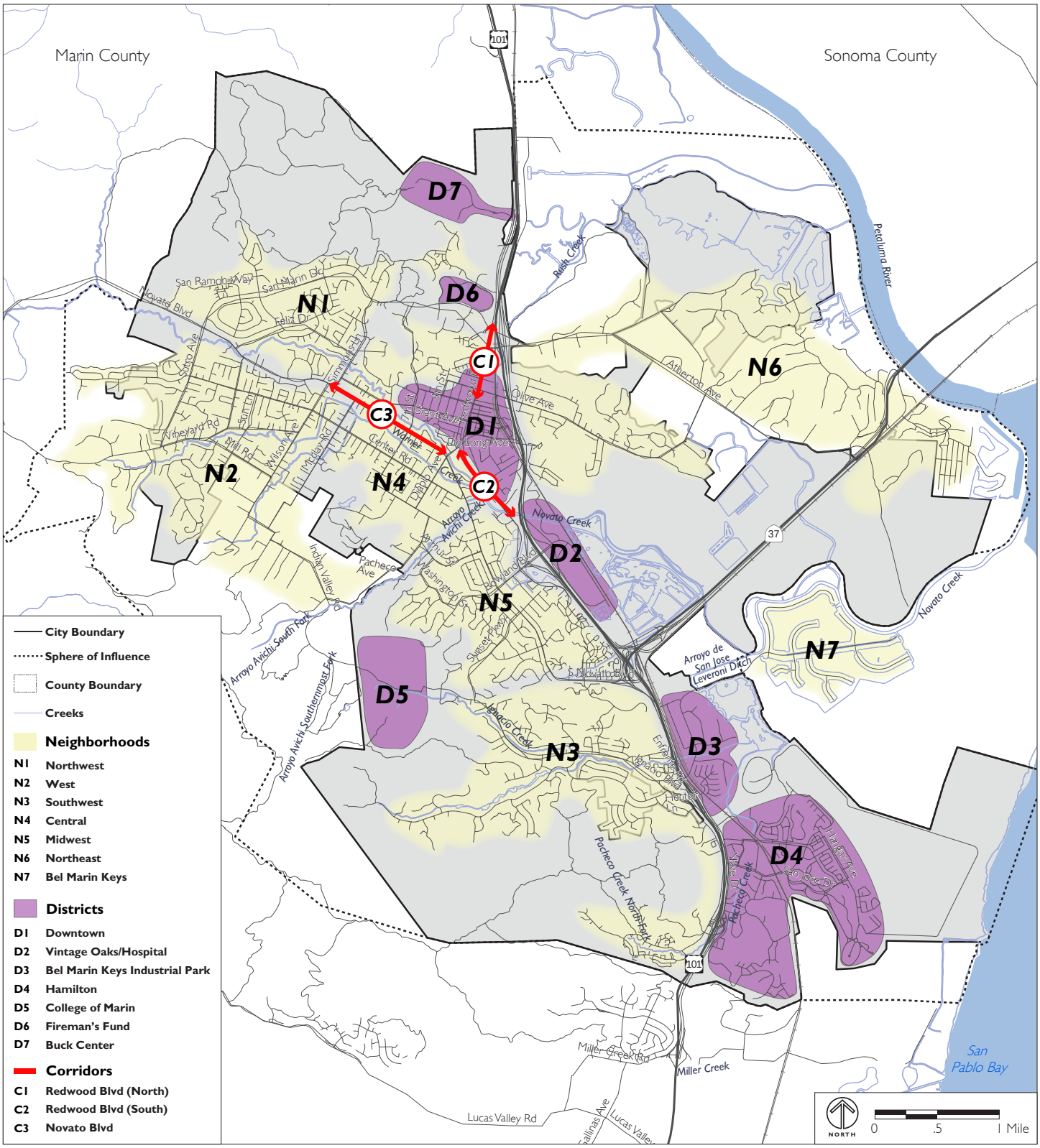
City of Novato 1998. *Downtown Specific Plan*. Novato, California. 1998

City of Novato 2007. *City of Novato General Plan – Revision October 9, 2007.* Novato, California. Resolution No. 122-07.

City of Novato 2009. *Existing Conditions Report.* Novato, California. March 25, 2009.

City of Novato 2013. *Revised Draft 2007-2014 Housing Element*. Novato, California. Revised Draft April 18, 2013.

City of Novato 2013. *Zoning Ordinance – Chapter 19 of the Novato Municipal Code*. Novato, California. Amended through May 2013.



CITY OF NOVATO HOUSING ELEMENT EIR

Figure 3.1-1: Novato Neighborhoods, Districts, and Corridors

Source: City of Novato Existing Conditions Report

This section was prepared in accordance with the 1999 Bay Area Air Quality Management District's *California Environmental Quality Act Air Quality Guidelines.* The analysis describes the regional climate, topography, air pollution potential, existing ambient air quality for criteria air pollutants, toxic air contaminants, odors, and dust, regulatory setting, an impact analysis, and mitigation measures.

Comments related to air quality received during the Notice of Preparation public review period include:

- General concerns related to air quality, and
- Site 3 (Redwood Boulevard) - Health impacts related to diesel exhaust and other freeway-related pollution exposure.

3.2.1 EXISTING SETTING

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the San Francisco Bay Area Air Basin (SFBAAB), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma, and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

CLIMATE, TOPOGRAPHY, AIR POLLUTION POTENTIAL

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

High Pressure Cell

During the summer, the large-scale meteorological condition that dominates the West Coast is a semi-permanent high pressure cell centered over the northeastern Pacific Ocean. This high

pressure cell keeps storms from affecting the California coast. Hence, the SFBAAB experiences little precipitation in the summer months. Winds tend to blow on shore out of the north/northwest.

The steady northwesterly flow induces upwelling of cold water from below. This upwelling produces a band of cold water off the California coast. When air approaches the California coast, already cool and moisture-laden from its long journey over the Pacific, it is further cooled as it crosses this bank of cold water. This cooling often produces condensation resulting in a high incidence of fog and stratus clouds along the Northern California coast in the summer.

Generally in the winter, the Pacific high weakens and shifts southward, winds tend to flow offshore, upwelling ceases and storms occur. During the winter rainy periods, inversions (layers of warmer air over colder air; see below) are weak or nonexistent, winds are usually moderate and air pollution potential is low. The Pacific high does periodically become dominant, bringing strong inversions, light winds and high pollution potential.

Topography

The topography of the SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the SFBAAB. The greatest distortion occur when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summer time.

The only major break in California's Coast Range occurs in the SFBAAB. Here the Coast Range splits into western and eastern ranges. Between the two ranges lies San Francisco Bay. The gap in the western coast range is known as the Golden Gate, and the gap in the eastern coast range is the Carquinez Strait. These gaps allow air to pass into and out of the SFBAAB and the Central Valley.

Wind Patterns

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3 p.m. to 4 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low

and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

Temperature

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. On summer afternoons the temperatures at the coast can be 35ºF cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10º.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

Precipitation

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high, and thus pollution levels tend to be low. However, frequent dry periods do occur during the winter where mixing and ventilation are low and pollutant levels build up.

Air Pollution Potential

The potential for high pollutant concentrations developing at a given location depends upon the quantity of pollutants emitted into the atmosphere in the surrounding area or upwind, and the ability of the atmosphere to disperse the contaminated air. The topographic and climatological factors discussed above influence the atmospheric pollution potential of an area. Atmospheric pollution potential, as the term is used here, is independent of the location of emission sources and is instead a function of factors described below.

WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low

sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commute traffic (early morning) and wood burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants upvalley during the day, and cold air drainage flows move the air mass downvalley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

There are two types of inversions that occur regularly in the SFBAAB. One is more common in the summer and fall, while the other is most common during the winter. The frequent occurrence of elevated temperature inversions in summer and fall months acts to cap the mixing depth, limiting the depth of air available for dilution. Elevated inversions are caused by subsiding air from the subtropical high pressure zone, and from the cool marine air layer that is drawn into the SFBAAB by the heated low pressure region in the Central Valley.

The inversions typical of winter, called radiation inversions, are formed as heat quickly radiates from the earth's surface after sunset, causing the air in contact with it to rapidly cool. Radiation inversions are strongest on clear, low-wind, cold winter nights, allowing the build-up of such pollutants as carbon monoxide and particulate matter. When wind speeds are low, there is little mechanical turbulence to mix the air, resulting in a layer of warm air over a layer of cooler air next to the ground. Mixing depths under these conditions can be as shallow as 50 to 100 meters, particularly in rural areas. Urban areas usually have deeper minimum mixing layers because of heat island effects and increased surface roughness. During radiation inversions downwind transport is slow, the mixing depths are shallow, and turbulence is minimal, all factors which contribute to ozone formation.

Although each type of inversion is most common during a specific season, either inversion mechanism can occur at any time of the year. Sometimes both occur simultaneously. Moreover, the characteristics of an inversion often change throughout the course of a day. The terrain of the SFBAAB also induces significant variations among subregions.

SOLAR RADIATION

The frequency of hot, sunny days during the summer months in the SFBAAB is another important factor that affects air pollution potential. It is at the higher temperatures that ozone is formed. In the presence of ultraviolet sunlight and warm temperatures, reactive organic gases and oxides of nitrogen react to form secondary photochemical pollutants, including ozone.

Because temperatures in many of the SFBAAB inland valleys are so much higher than near the coast, the inland areas are especially prone to photochemical air pollution.

In late fall and winter, solar angles are low, resulting in insufficient ultraviolet light and warming of the atmosphere to drive the photochemical reactions. Ozone concentrations do not reach significant levels in the SFBAAB during these seasons.

SHELTERED TERRAIN

The hills and mountains in the SFBAAB contribute to the high pollution potential of some areas. During the day, or at night during windy conditions, areas in the lee sides of mountains are sheltered from the prevailing winds, thereby reducing turbulence and downwind transport. At night, when wind speeds are low, the upper atmospheric layers are often decoupled from the surface layers during radiation conditions. If elevated terrain is present, it will tend to block pollutant transport in that direction. Elevated terrain also can create a recirculation pattern by inducing upvalley air flows during the day and reverse downvalley flows during the night, allowing little inflow of fresh air.

The areas having the highest air pollution potential tend to be those that experience the highest temperatures in the summer and the lowest temperatures in the winter. The coastal areas are exposed to the prevailing marine air, creating cooler temperatures in the summer, warmer temperatures in winter, and stratus clouds all year. The inland valleys are sheltered from the marine air and experience hotter summers and colder winters. Thus, the topography of the inland valleys creates conditions conducive to high air pollution potential.

POLLUTION POTENTIAL RELATED TO EMISSIONS

Although air pollution potential is strongly influenced by climate and topography, the air pollution that occurs in a location also depends upon the amount of air pollutant emissions in the surrounding area or transported from more distant places. Air pollutant emissions generally are highest in areas that have high population densities, high motor vehicle use and/or industrialization. These contaminants created by photochemical processes in the atmosphere, such as ozone, may result in high concentrations many miles downwind from the sources of their precursor chemicals.

Marin County Basins Climatological Subregions

There are 11 climatological subregions within the SFBAAB. The City of Novato is located within the Marin County Basins region, which is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate and on the north by the Petaluma Gap. Most of Marin's population lives in the eastern part of the county, in small, sheltered valleys. These valleys act like a series of miniature air basins.

Although there are a few mountains above 1500 feet, most of the terrain is only 800 to 1000 feet high, which usually is not high enough to block the marine layer. Because of the wedge shape of the county, northeast Marin County is further from the ocean than is the southeastern section. This extra distance from the ocean allows the marine air to be moderated by bayside conditions as it travels to northeastern Marin County. In southern Marin the distance from the ocean is short and elevations are lower, resulting in higher incidence of maritime air in that area.

Wind speeds are highest along the west coast of Marin, averaging about 8 to 10 miles per hour. The complex terrain in central Marin creates sufficient friction to slow the air flow. At Hamilton Air

Force Base, in Novato, the annual average wind speeds are only 5 mph. The prevailing wind directions throughout Marin County are generally from the northwest.

In the summer months, areas along the coast are usually subject to onshore movement of cool marine air. In the winter, proximity to the ocean keeps the coastal regions relatively warm, with temperatures varying little throughout the year. Coastal temperatures are usually in the high-50's in the winter and the low-60's in the summer. The warmest months are September and October.

The eastern side of Marin County has warmer weather than the western side because of its distance from the ocean and because the hills that separate eastern Marin from western Marin occasionally block the flow of the marine air. The temperatures of cities next to the Bay are moderated by the cooling effect of the Bay in the summer and the warming effect of the Bay in the winter. For example, San Rafael experiences average maximum summer temperatures in the low-80's and average minimum winter temperatures in the low-40's. Inland towns such as Kentfield experience average maximum temperatures that are two degrees cooler in the winter and two degrees warmer in the summer.

Air pollution potential is highest in eastern Marin County, where most of population is located in semi-sheltered valleys. In the southeast, the influence of marine air keeps pollution levels low. As development moves further north, there is greater potential for air pollution to build up because the valleys are more sheltered from the sea breeze. While Marin County does not have many polluting industries, the air quality on its eastern side — especially along the U.S. 101 corridor — may be affected by emissions from increasing motor vehicle use within and through the county.

EXISTING AMBIENT AIR QUALITY: CRITERIA AIR POLLUTANTS

The California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, particulate matter (PM), nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health, they are commonly referred to as "criteria air pollutants." Sources and health effects of the criteria air pollutants are summarized in Table 3.2-1.

TABLE 3.2-1 COMMON SOURCES OF HEALTH EFFECTS FOR CRITERIA AIR POLLUTANTS

POLLUTANTS	*SOURCES*	*HEALTH EFFECTS*
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases; reduced lung function; increased cough and chest discomfort
Particulate Matter (Respirable Particulate Matter-PM_{10}) (Fine Particulate Matter-$PM_{2.5}$)	Stationary combustion of solid fuels; construction activities; industrial processes; atmospheric chemical reactions	Reduced lung function; aggravation of respiratory and cardiovascular diseases; increases in mortality rate; reduced lung function growth in children
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust; high temperature stationary combustion; atmospheric	Aggravation of respiratory illness

	reactions	
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; natural events, such as decomposition of organic matter	Aggravation of some heart diseases; reduced tolerance for exercise; impairment of mental function; birth defects; death at high levels of exposure
Sulfur Dioxide (SO_2)	Combination of sulfur-containing fossil fuels; smelting of sulfur-bearing metal ore; industrial processes	Aggravation of respiratory diseases; reduced lung function
Lead	Contaminated soil	Behavioral and hearing disabilities in children; nervous system impairment

SOURCE: BAY AREA AIR QUALITY MANAGEMENT DISTRICT (2012)

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between Reactive Organic Gases (ROG) and Nitrogen Oxides (NOX) in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NOX and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) the evaporation of solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to about 50 mph, then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 mph and then begin to increase with increasing speeds.

Ozone levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Particulate Matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. Some particulate matter, such as pollen, is naturally occurring. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The EPA and the state of California revised their particulate matter standards several years ago to apply only to these fine particles. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for about

half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.

Nitrogen Dioxide (NO2) is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide (CO) is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 mph for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Sulfur Dioxide (SO2) is a colorless acid gas with a pungent odor. It has potential to damage materials and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.

Ambient Air Quality Standards and Designations

The current national ambient air quality standards (NAAQS) and state ambient air quality standards and attainment standards are presented in Table 3.2-2.

TABLE 3.2-2 AMBIENT AIR QUALITY STANDARDS AND DESIGNATIONS

POLLUTANT	AVERAGING TIME	CALIFORNIA		NATIONAL STANDARDS[A]		
		STANDARDS[B, C]	ATTAINMENT STATUS[D]	PRIMARY[C,E]	SECONDARY[C,F]	ATTAINMENT STATUS[G]
Ozone	1-hour	0.09 ppm (180 µg/m3)	N (Serious)	–[h]	Same as Primary Standard	–[h]
	8-hour	0.070 ppm (137 µg/m3)	–	0.075 ppm (147 µg/m3)		N
Carbon Monoxide	1-hour	20 ppm (23 mg/m3)	A	35 ppm (40 mg/m3)	–	U/A
	8-hour	9 ppm (10 mg/m3)		9 ppm (10 mg/m3)		
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	–	0.053 ppm (100 µg/m3)	Same as Primary Standard	U/A
	1-hour	0.18 ppm (339 µg/m3)	A	–		–
Sulfur Dioxide	Annual Arithmetic Mean	–	–	0.030 ppm (80 µg/m3)	–	A
	24-hour	0.04 ppm (105 µg/m3)	A	0.14 ppm (365 µg/m3)	–	
	3-hour	–	–	–	0.5 ppm (1300 µg/m3)	
	1-hour	0.25 ppm (655 µg/m3)	A	–	–	–
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m3	N	– h	Same as Primary Standard	U
	24-hour	50 µg/m3		150 µg/m3		
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m3	N	15 µg/m3	Same as Primary Standard	N[j]
	24-hour	–	–	35 µg/m3		
Lead[i]	30-day Average	1.5 µg/m3	A	–	–	–
	Calendar Quarter	–	–	1.5 µg/m3	Same as Primary Standard	–
Sulfates	24-hour	25 µg/m3	A	No National Standards		
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m3)	U			
Vinyl Chloride i	24-hour	0.01 ppm (26 µg/m3)	–			
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U			

[a] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the

POLLUTANT	AVERAGING TIME	CALIFORNIA		NATIONAL STANDARDS [A]		
		STANDARDS [B, C]	ATTAINMENT STATUS [D]	PRIMARY [C,E]	SECONDARY [C,F]	ATTAINMENT STATUS [G]

standard. Contact the EPA for further clarification and current federal policies.

[b] California standards for ozone, CO (except Lake Tahoe), SO2 (1- and 24-hour), NO2, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[c] Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m3)]. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A): a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area.

Nonattainment/Transitional (NT): is a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for that pollutant.

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

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

[g] Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment (A): any area that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassifiable (U): any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[h] The 1-hour ozone NAAQS was revoked on June 15, 2005 and the annual PM10 NAAQS was revoked in 2006.

[i] CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for this pollutant.

[j] U.S EPA lowered the 24-hour $PM_{2.5}$ standard from 65 µg/m3 to 35 µg/m3 in 2006. EPA issued attainment status designations for the 35 µg/m3standard on December 22, 2008. EPA has designated the Bay Area as nonattainment for the 35 µg/m3 $PM_{2.5}$ standard. The EPA designation will be effective 90 days after publication of the regulation in the Federal Register.

SOURCE: BAY AREA AIR QUALITY MANAGEMENT DISTRICT (2012)

Monitoring Data

The BAAQMD operates a regional air quality monitoring network that regularly measures the concentrations of the five major criteria air pollutants. Air pollutant monitoring data is available at http://www.arb.ca.gov/adam/welcome.html. Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955. Ambient concentrations and the number of days on which the region exceeds standards have declined dramatically. Neither federal nor State ambient air quality standards have been violated in recent decades for nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride.

Emissions Inventory

The BAAQMD estimates emissions of criteria air pollutants from approximately nine hundred source categories. The estimates are based on BAAQMD permit information for stationary sources (e.g., manufacturing industries, refineries, dry-cleaning operations), plus more generalized estimates for area sources (e.g., space heating, landscaping activities, use of consumer products) and mobile sources (e.g., trains, ships and planes, as well as on-road and off-road motor vehicles). The closest monitoring station to the City of Novato is in San Rafael. BAAQMD emissions inventory data is available at http://www.arb.ca.gov/ei/maps/statemap/dismap.htm.

EXISTING AMBIENT AIR QUALITY: TOXIC AIR CONTAMINANTS

In addition to the criteria air pollutants listed above, another group of pollutants, commonly referred to as toxic air contaminants (TACs) or hazardous air pollutants can result in health effects that can be quite severe. TACs are pollutants that result in an increase in mortality, a serious illness, or pose a present or potential hazard to human health. Health effects of TACs may include cancer, birth defects, and immune system and neurological damage.

TACs can be separated into carcinogens and noncarcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts will not occur. Noncarcinogenic TACs differ in that there is a safe level in which it is generally assumed that no negative health impacts would occur. These levels are determined on a pollutant-by-pollutant basis.

Industrial facilities and mobile sources are significant sources of TACs. The electronics industry, including semiconductor manufacturing, has the potential to contaminate both air and water due to the highly toxic chlorinated solvents commonly used in semiconductor production processes. Sources of TACs go beyond industry. Various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Diesel particulate matter has also been identified as a TAC by the CARB. Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of diesel PM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.

EXISTING AMBIENT AIR QUALITY: ODORS AND DUST

Other air quality issues of concern in the SFBAAB include nuisance impacts of odors and dust. Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries and chemical plants. Similarly, nuisance dust may be generated by a variety of sources including quarries, agriculture, grading and construction. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to anger and concern over possible health effects among the public. Each year the BAAQMD receives thousands of citizen complaints about objectionable odors. Dust emissions can contribute to increased ambient concentrations of PM_{10}, and can also contribute to reduced visibility and soiling of exposed surfaces.

3.2.2 REGULATORY SETTING

Air quality with respect to criteria air pollutants and TACs within the SFBAAB is regulated by such agencies as the BAAQMD, CARB, and EPA. Each of these agencies develops rules, regulations, policies, and/or goals to attain the goals or directives imposed through legislation. Although the EPA regulations may not be superseded, both state and local regulations may be more stringent.

It is important to understand that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, the EPA and

CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology (MACT) or best available control technology (BACT) to limit emissions. These in conjunction with additional rules set forth by the BAAQMD establish the regulatory framework for TACs.

FEDERAL

U.S. Environmental Protection Agency

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required EPA to establish primary and secondary NAAQS. The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Federal Hazardous Air Pollutant Program

Title III of the FCAAA requires the EPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs). The NESHAP may differ for major sources than for area sources of HAPs (major sources are defined as stationary sources with potential to emit more than 10 tons per year [TPY] of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources). The emissions standards are to be promulgated in two phases. In the first phase (1992–2000), the EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These federal rules are also commonly referred to as MACT standards. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), the EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards. The FCAAA required the EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, the FCAAA required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions.

STATE

In 1992 and 1993, the California Air Resources Board (CARB) requested delegation of authority for the implementation and enforcement of specified New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS) to the following local agencies: Bay Area and South Coast Air Quality Management Districts (AQMDs). EPA's review of the State of California's laws, rules, and regulations showed them to be adequate for the implementation and enforcement of these federal standards, and EPA granted the delegations as requested.

California Air Resources Board

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The CARB is primarily responsibility for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The CARB combines this data and submits the completed SIP to EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

Transport of Pollutants

The California Clean Air Act, Chapter 1568 of the Statutes of 1988, directs the CARB to "identify each district in which transported air pollutants from upwind areas outside the district cause or contribute to a violation of the ozone standard and to identify the district of origin of transported pollutants." The information regarding the transport of air pollutants from one basin to another was to be quantified to assist interrelated basins in the preparation of plans for the attainment of State ambient air quality standards. Numerous studies conducted by the CARB have identified air basins that are impacted by pollutants transported from other air basins (as of 1993). Among the air basins affected by air pollution transport from the SFBAAB are the North Central Coast Air Basin, the Mountain Counties Air Basin, the San Joaquin Valley Air Basin, and the Sacramento Valley Air Basin. The SFBAAB was also identified as an area impacted by the transport of air pollutants from the Sacramento region.

State Toxic Air Contaminant Programs

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal

procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified over 21 TACs, and adopted the EPA's list of HAPs as TACs. Most recently, diesel exhaust particulate was added to the CARB list of TACs. Once a TAC is identified, the CARB then adopts an Airborne Toxics Control Measure for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions. None of the TACs identified by CARB have a safe threshold.

The Hot Spots Act requires that existing facilities that emit toxic substances above specified level:

1. Prepare a toxic emission inventory;
2. Prepare a risk assessment if emissions are significant;
3. Notify the public of significant risk levels;
4. Prepare and implement risk reduction measure.

CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). In February 2000, CARB adopted a new public transit bus fleet rule and emission standards for new urban buses. These new rules and standards provide for 1) more stringent emission standards for some new urban bus engines beginning with 2002 model year engines, 2) zero-emission bus demonstration and purchase requirements applicable to transit agencies, and 3) reporting requirements with which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low sulfur diesel fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide. Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially less TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade, and will be reduced further in California through a progression of regulatory measures [e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be reduced by 75% in 2010 and 85% in 2020 from the estimated year 2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

Bay Area Air Quality Management District

BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. BAAQMD also inspects stationary sources of air pollution and responds to citizen

complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the FCAA, FCAAA, and the CCAA.

In 2010, BAAQMD adopted CEQA Guidelines with new thresholds of significance. The thresholds of significance were then challenged in a lawsuit. On March 5, 2012 the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted the thresholds and issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. The BAAQMD's 1999 CEQA Guidelines are the CEQA Guidelines that establish thresholds of significance that are currently in effect and applicable to the proposed project. The project operations and construction thresholds contained in the 1999 CEQA Guidelines are as follows:

Project Operations:

- Carbon Monoxide: Screening criteria of projects in which vehicle emissions of CO would exceed 550 pounds per day, or project traffic would impact intersections or roadway links operating at Level of Service D, E, or F
- ROG, NOx, and PM10 – Emissions in excess of 15 tons per year or 80 pounds per day

Project Construction:

- Construction activities complying with BAAQMD's feasible PM10 control measures (see Mitigation Measure 3.2-2 below) and District Regulation 11, Rule 2 would be considered to have a less than significant impact.

Air Quality Plans

As stated above, BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans (OAP) for the national ozone standard and clean air plans (CAP) for the California standard both in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments.

With respect to applicable air quality plans, BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the national 1-hour ozone standard in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:

1. Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
2. Consider the impacts of ozone control measures on particulate matter, air toxics, and greenhouse gases in a single, integrated plan;
3. Review progress in improving air quality in recent years;
4. Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.
5. Similarly, the BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the CAAQS.

Toxic Air Contaminants

The BAAQMD has regulated TACs since the 1980s. At the local level, air pollution control or management districts may adopt and enforce CARB's control measures. Under BAAQMD

Regulation 2-1 (General Permit Requirements), Regulation 2-2 (New Source Review), and Regulation 2-5 (New Source Review), all nonexempt sources that possess the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. The BAAQMD limits emissions and public exposure to TACs through a number of programs. The BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. In addition, the BAAQMD has adopted Regulation 11 Rules 2 and 14, which address asbestos demolition renovation, manufacturing, and standards for asbestos containing serpentine.

City of Novato General Plan

The adopted City of Novato General Plan identifies the following objectives, policies, and programs related to energy conservation and air quality within Chapter IV: Environment:

ENERGY CONSERVATION

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.

AIR QUALITY

Refer to the Transportation Chapter for additional policies and programs regarding air quality.

EN Policy 32 Regional Planning to Improve Air Quality. Continue to cooperate with the Bay Area Air Quality Management District (BAAQMD) in implementing the regional Clean Air Plan.

EN Program 32.1: Use the environmental review process to determine whether air emissions from proposed development would exceed BAAQMD standards.

EN Program 32.2: If fireplaces or wood burning stoves/heaters are installed in new development, these fireplaces, stoves, and/or heaters shall meet the most current EPA standards regarding particulate emissions.

EN Program 32.3: The City shall monitor new development to ensure that projections made in the Draft General Plan are not exceeded. If there is substantial increase in development over projections; then the City shall investigate additional transportation, land use, and air quality beneficial measures to improve air quality.

EN Policy 33 Vehicle Trips. Encourage transportation facilities and modes that minimize motor vehicle use.

EN Program 33.1: Develop program for trip reduction and implement as permitted by law.

EN Policy 34 Local Efforts. Encourage local efforts to improve air quality.

EN Program 34.1: Use the City's development review process and California Environmental Quality Act (CEQA) regulations to evaluate and mitigate the local and cumulative effects of new development on air quality.

EN Program 34.2: Continue to include responsible agencies in the review of proposed land uses that would handle, store or transport any potential air pollutant sources such as, but not limited to, lead, mercury, vinyl chloride, benzene, asbestos, beryllium, and all fossil fuels.

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.

EN Program 34.5: Support a strong street tree planting and community forest component of the proposed Tree Preservation Ordinance and tree management program to help improve local air quality.

3.2.3 IMPACTS AND MITIGATION MEASURES

Long range plans (e.g., general plan, etc.) present unique challenges for assessing impacts because they contain development strategies for 20-year, or longer, time horizons. Due to the SFBAAB's nonattainment status for ozone and PM, and the cumulative impacts of growth on air quality, these plans almost always have significant, unavoidable adverse air quality impacts. CEQA requires the lead agency to evaluate individual as well as cumulative impacts of general plans, and all feasible mitigation measures must be incorporated within the proposed plan to reduce significant air quality impacts.

The BAAQMD CEQA Guidelines provide guidance on how to evaluate air quality change impacts of long-range plans prepared within the SFBAAB pursuant to CEQA. Air quality impacts from future development pursuant to general plans can be divided into construction-related impacts and operational-related impacts. Construction-related impacts are associated with construction activities likely to occur in conjunction with future development allocated by the plan. Operational-related impacts are associated with continued and future operation of developed land uses, including increased vehicle trips and energy use.

While the Housing Element is a plan-level document, it does include the potential for subsequent development of five Affordable Housing Overlay (AHO) sites. As such, the following analysis also contains a project-level emissions analysis for the five housing opportunity sites to the extent that information is available for the five housing opportunity sites. It should be understood that the five AHO sites are not currently proposed for development, but rather, the City of Novato has identified these for affordable housing opportunities that may be developed in the future.

THRESHOLDS OF SIGNIFICANCE

Consistent with the Bay Area Air Quality Management District 1999 CEQA Guidelines, the proposed project will have a significant impact on the environment associated with air quality if it will:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Create objectionable odors affecting a substantial number of people.

Note: Greenhouse gas emissions are addressed in a Chapter 3.6 of this EIR.

IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation – Project Operations (Potentially Significant)

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development.

Many of the programs in the Housing Element will not affect air quality, including programs that commit the City to considering various housing related issues, but either do not require any specific action or the action associated with the program will be determined in the future (HO Programs 4.A, 5.D, 5.F, 5.I, 5.J, 6.B, 6.C, 7.A, 7.E, 7.F, 8.B, 9.A, 9.C, 9.D, 11.A, 14.A, 14.B, 15.A, 15.B), programs for continued implementation of adopted or existing standards and regulations (HO Programs 2.A, 2.B, 4.B, 5.B, 5.K, 8.A, 9.D, 11.A), programs involving City processing of housing projects (9.F, 9.G, 9.H, 9.I, 12.C, 13.A), programs involving coordination with various agencies, organizations, and property owners (HO Programs 1.B, 1.C, 5.E, 5.G, 5.H, 6.A, 7.B, 7.D, 10.A, 12.B, 13.B, 14.C), programs that affect management of housing (HO Programs 5.A), and programs involving outreach and the dissemination of information regarding housing issues (HO Programs 1.A, 5.C, 5.G, 7.F, 13.C).

While some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts (Program 12.D), allowing farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Table 2.0-1, these programs would not change the location of allowed urban uses or significantly increase the intensity of future development and thus would not have the potential to substantially affect air quality.

The following Housing Element programs contemplate specific actions that would accommodate increased development densities and intensities potentially having an effect on the air quality. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an AHO district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (up to 30 units per acre) for senior housing on the five AHO sites.

Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks.

Because the Housing Element includes programs that would accommodate increased development densities and intensities that could affect air quality, the future development potential of the AHO sites is analyzed below. The analysis includes three different scenarios (Scenario 1, Scenario 2, and Scenario 3) as described in Chapter 2.0, Project Description. Table 3.2-3 presents information for each scenario.

TABLE 3.2-3: AFFORDABLE HOUSING OPPORTUNITY SITES

Site	*APN*	*Total Acres*	*Net Buildable Acres**	*Scenario 1: Multifamily Housing at 23 du/ac*	*Scenario 2: Multifamily Housing Capacity with Max Allowable (35%) State Density Bonus*	*Scenario 3: Senior Housing Capacity with City Density Bonus and Max Allowable (35%) State Density Bonus*
1	1787 Grant Ave. 141-201-48, 141-201-12	2.14	1.75	40	54	66
2	Landing Court 153-162-59	2.11	1.5	34	46	57
3	Redwood Blvd. 125-202-18	4	4	92	125	153
4	7506 Redwood Blvd. 143-011-08	1.76	1.76	40	54	66
5	1905 Novato Blvd. 140-011-66	1.06	1.06	24	33	40
TOTAL		**11.07**	**10.07**	**230**	**312**	**382**

Each of the three scenarios would result in a different number of units and would have different trip characteristics, which affects total air emissions. Completion and occupation of all development assumed in Scenario 1 would be expected to generate an average of 1,453 new weekday vehicle trips, including 86 during the weekday a.m. peak hour and 118 during the weekday p.m. peak hour. While development of each site with senior housing as assumed in Scenario 3 would result in more units than Scenario 2, senior housing generates substantially fewer vehicle trips than traditional multi-family housing and even with the higher number of units, the total trip generation at each site with senior housing results in approximately 35 percent fewer daily trips and approximately 55 percent fewer peak hour trips. As a result, for the purposes of the air quality analysis, Scenario 2 was assumed to represent a "worst case" condition between the two density bonus scenarios (Scenario 2 and 3), and no separate analysis was performed for Scenario 3.

The development of these five AHO sites is not currently proposed; therefore, there is not a detailed application or other information concerning the construction schedule or operational date of these projects. For purposes of this analysis, it has been assumed that the five sites are developed and operational by 2016. The five sites will likely be developed over an extended period of time; therefore, this development assumption is a very conservative assumption.

Scenario 1: The California Emission Estimator Model (CalEEMod)^{TM} (v.2011.1.14) was used to estimate project-level operational emissions for Scenario 1. Table 3.2-4 shows the emissions, which include mobile source, area source, and energy emissions of criteria pollutants that would

result from operations of Scenario 1. The full calculations, inputs, and assumptions are provided in Appendix B.

TABLE 3.2-4: SCENARIO 1 OPERATIONAL EMISSIONS

	ROG		***NOx***		***PM_{10}***		***$PM_{2.5}$***	
Threshold	**80lbs/day**		**80 lbs/day**		**80 lbs/day**		**80 lbs/day**	
Category	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Summer (maximum daily lbs/day)								
Area	280.71	7.47	9.09	0.23	97.70	0.63	97.69	0.62
Energy	0.13	0.13	1.08	1.08	0.09	0.09	0.09	0.09
Mobile	7.83	7.60	12.28	11.75	12.63	12.00	0.88	0.84
Total	**288.67**	**15.20**	**22.45**	**13.06**	**110.42**	**12.72**	**98.66**	**1.55**
Winter (maximum lbs/day)								
Area	280.71	9.09	9.09	0.23	97.70	0.63	97.69	0.62
Energy	0.13	1.08	1.08	1.08	0.09	0.09	0.09	0.09
Mobile	7.92	12.57	13.13	12.57	12.63	12.00	0.88	0.84
Total	**288.76**	**22.74**	**23.30**	**13.88**	**110.42**	**12.72**	**98.66**	**1.55**

NOTE: SITE 1 CURRENTLY CONTAINS A DAY CARE FACILITY WITH 35 STUDENTS, AND SITE 5 CONTAINS OFFICE USE WITH 5,600 SQUARE FEET, BOTH OF WHICH CURRENTLY GENERATE EMISSIONS. THE EMISSIONS SHOWN ABOVE REFLECT GROSS EMISSIONS AND DO NOT REFLECT THE ELIMINATION OF THE EXISTING EMISSIONS; THEREFORE, THE ABOVE EMISSIONS IS A SLIGHT OVERESTIMATE.

SOURCES: CALEEMOD (V.2011.1.1)

As shown in the table above, operational ROG, PM_{10}, and $PM_{2.5}$ emissions exceed the threshold of significance under the unmitigated model run. This is a **potentially significant** impact. The primary source of the emission exceedance within the model is associated with the use of wood burning (open hearth) fireplaces.

Scenario 2: The California Emission Estimator Model (CalEEMod)™ (v.2011.1.14) was used to estimate project-level operational emissions for Scenario 2, with the density bonus applied to multifamily units. **Table 3.2-5** shows the emissions, which include mobile source, area source, and energy emissions of criteria pollutants that would result from operations of the Scenario 2. The full calculations, inputs, and assumptions are provided in Appendix B.

TABLE 3.2-5: SCENARIO 2 OPERATIONAL EMISSIONS

	ROG		***NOx***		***PM_{10}***		***$PM_{2.5}$***	
Threshold	**80 lbs/day**		**80 lbs/day**		**80 lbs/day**		**80 lbs/day**	
Category	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Summer (maximum daily lbs/day)								
Area	380.79	10.14	12.34	0.31	132.53	0.85	132.52	0.84
Energy	0.17	0.17	1.46	1.46	0.12	0.12	0.12	0.12
Mobile	10.63	10.31	16.66	15.94	17.13	16.28	1.19	1.14
Total	**391.59**	**20.62**	**30.46**	**17.71**	**149.78**	**17.25**	**133.83**	**2.10**
Winter (maximum lbs/day)								
Area	380.79	10.14	12.34	0.31	132.53	0.85	132.52	0.84
Energy	0.17	0.17	1.46	1.46	0.12	0.12	0.12	0.12
Mobile	10.74	10.38	17.81	17.04	17.13	16.28	1.20	1.14
Total	**391.70**	**20.69**	**31.61**	**18.81**	**149.78**	**17.25**	**133.84**	**2.10**

NOTE: SITE 1 CURRENTLY CONTAINS A DAY CARE FACILITY WITH 35 STUDENTS, AND SITE 5 CONTAINS OFFICE USE WITH 5,600 SQUARE FEET, BOTH OF WHICH CURRENTLY GENERATE EMISSIONS. THE EMISSIONS SHOWN ABOVE REFLECT GROSS EMISSIONS AND DO NOT REFLECT THE ELIMINATION OF THE EXISTING EMISSIONS; THEREFORE, THE ABOVE EMISSIONS IS A SLIGHT OVERESTIMATE.

SOURCES: CALEEMOD (V.2011.1.1)

As shown in the table above, operational ROG, PM_{10}, and $PM_{2.5}$ emissions exceed threshold of significance under the unmitigated model run. The primary source of the emission exceedance is associated with the use of wood burning (open hearth) fireplaces. This is a **potentially significant** impact.

MITIGATION MEASURES

Mitigation Measure 3.2-1*: As part of the City's design review and entitlement process, the City shall require future development plans for Sites 1 through 5 to implement the following:*

- *Only natural gas burning fireplaces shall be installed in the housing units to reduce Area Source criteria pollutants.*
- *Only low Volatile Organic Compound paint (150 g/L) (interior and exterior) on the project site.*
- *The developer shall install high efficiency appliances (refrigerator, fans, washers).*
- *The developer shall install low-flow faucets, toilets, showers.*
- *The developer shall install water-efficient irrigation systems.*

SIGNIFICANCE AFTER MITIGATION

Development under Scenario 1 or Scenario 2 will result in emissions that exceed significance thresholds established by BAAQMD. Comparatively, Scenario 2 would have the highest emissions. Some basic mitigation was input into the model to ensure that air emissions are reduced to the extent possible. Mitigation inputs included the following:

Area Source:

- Natural gas fireplaces/stoves.
- Low Volatile Organic Compound architectural coatings (150 g/L).

Energy Source

- Install high efficiency appliances (refrigerator, fans, washers)

Indoor Water Use

- Install low-flow faucets, toilets, showers
- Use water-efficient irrigation systems

As shown in Tables 3.2-6 and 3.2-7 above, emissions are significantly reduced with the inclusion of the components identified in Mitigation Measure 3.2-1 and would be below the thresholds of significance established by the BAAQMD. As such, implementation of the proposed project with Mitigation Measure 3.2-1 would have a **less than significant** impact relative to this topic.

Impact 3.2-2: Potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation – Project Construction (Potentially Significant)

As discussed under Impact 3.2-1, many of the Housing Element programs will not have a substantial affect on air quality. Programs 9.B and 9.E would result in increased development density and intensity, as described above. Each scenario that is discussed and analyzed under Impact 3.2-1 would result in a different number of units and it was shown that each would have different operational air emissions. The development of land under these scenarios is not currently

proposed; therefore, there is not a detailed application or other information concerning the construction schedule or operational date of these projects. For the purposes of this analysis, it has been assumed that the five sites are developed and operational by 2016. The five sites will likely be developed over an extended period of time; therefore, this development assumption is a very conservative assumption.

Construction Activities/Schedule: Construction activities will consist of construction on the five AHO sites over several years. These construction activities can be described as site improvements (grading, underground infrastructure, and topside improvements) and vertical construction (building construction and architectural coatings).

Site Improvements: The exact construction schedule is largely dependent on the economic conditions of the region, the ability for the market to absorb the proposed residential units, and the property owner's desire to develop the property. For purposes of this analysis it is assumed that site improvements of the five sites are installed in one phase. This approach will present a more conservative and worst-case scenario. (Note: Absent a development plan for the five sites, the default construction schedule from CalEEMod was used for modeling. This default schedule represents a very conservative construction schedule.)

The site improvement phase of construction will begin with site preparation and demolition. This step will include the use of dozers, backhoes, and loaders to strip (clear and grub) all organic materials and the upper half-inch to inch of soil from the sites. Those sites that are developed will require demolition of the structures and improvements currently located on site. Given the size of the five sites, this task will take a month or less to complete and will include vehicle trips from construction workers.

After the sites are prepared grading will begin. This activity will involve the use of excavators, graders, dozers, scrappers, loaders, and backhoes to move soil around the sites to create specific engineered grade elevations and soil compaction levels. Due to the size of the five sites, grading would likely take less than a month and will include vehicle trips from construction workers. The next step involves the installation of underground infrastructure. This step will involve the use of excavators to dig trenches, place pipe and conduit, bury pipe and conduit, and compact trench soil. Underground infrastructure installation would take approximately a month and will include vehicle trips from construction workers. The last task is to install the topside improvements, which includes pouring concrete curbs, gutters, sidewalks, and driveway aprons and then paving of all streets and parking lots. This task will involve the use of pavers, paving equipment, and rollers and will take approximately a month and will include vehicle trips from construction workers.

It is not known at this time whether the development of these five sites could require the installation of new or upsized offsite infrastructure. Absent any engineering for new or upsized offsite infrastructure, a schedule cannot be accurately estimated.

Building Construction/Architectural Coatings: Building construction involves the vertical construction of structures and landscaping around the structures. This task will involve the use of forklifts, generator sets, welders and small tractors/loaders/backhoes. The exact construction schedule is largely dependent on the economic conditions of the region, the ability for the market to absorb the proposed residential units, and the property owner's desire to develop the property.

For purposes of this analysis it is assumed that building construction/architectural coatings at the five sites are installed in one phase. This approach will present a more conservative and worst-case scenario. The actual absorption may be much longer, which would result in a decrease in the daily emissions because construction would be spread over an extended period of time. Architectural coatings involve the interior and exterior painting associated with the structures. The default architectural coatings VOC was adjusted to 150 (g/L) from 250 (g/L) in accordance with the Bay Area Air Quality Management District's Regulation 8, Rule 3: Architectural Coatings. This task will generally begin four or five months after construction begins on the structure and will generally be completed with the completion of the building.

Construction Emissions: BAAQMD recommends that the determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From BAAQMD's perspective, quantification of construction emissions is not necessary, although a Lead Agency may elect to do so. The BAAQMD 1999 CEQA Guidelines do not include thresholds of significance for construction emissions when the Lead Agency elects to quantify such emissions. The quantified emissions provided below are intended to be for information purposes.

A quantification of the maximum daily emissions of ROG, NOX, PM10, and PM2.5 that will be emitted by construction (expressed in pounds per day) at the five housing opportunity sites has been performed. The California Emission Estimator Model (CalEEMod)^{TM} (v.2011.1.14) was used to estimate construction emissions for the proposed project. Tables 3.2-6 and 3.2-7 show the construction emissions for the construction years 2015 and 2016. A construction schedule is not currently proposed, therefore, this analysis assumes a worst-case scenario of the five AHO sites developing concurrently. This is not likely and it is anticipated that emissions would be staggered over a longer time period and that the actual daily emissions would be substantially less.

TABLE 3.2-6: SCENARIO 1 CONSTRUCTION EMISSIONS

	ROG		***NOx***		***PM_{10}***		***$PM_{2.5}$***	
Category	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Summer (maximum daily lbs/day)								
2015	10.71	10.71	83.36	83.36	21.64	10.62	13.24	7.18
2016	216.28	216.28*	30.35	30.35	4.46	4.46	2.37	2.37
Winter (maximum lbs/day)								
2015	10.72	10.72	83.37	83.37	21.64	10.62	13.24	7.18
2016	216.30	216.30*	30.54	30.54	4.46	4.46	2.37	2.37

SOURCES: CALEEMOD (V.2011.1.1)

TABLE 3.2-7: SCENARIO 2 CONSTRUCTION EMISSIONS

	ROG		***NOx***		***PM_{10}***		***$PM_{2.5}$***	
Category	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
Summer (maximum daily lbs/day)								
2015	10.71	10.71	83.36	83.36	21.64	10.62	13.24	7.18
2016	293.26	293.26*	31.61	31.61	5.48	4.47	2.37	2.37
Winter (maximum lbs/day)								
2015	10.72	10.72	83.37	83.37	10.64	10.62	7.18	7.18
2016	293.28	293.28*	31.86	31.86	5.48	5.48	2.37	2.37

SOURCES: CALEEMOD (V.2011.1.1)

**IMPLEMENTATION OF MITIGATION MEASURE 3.3-2 WOULD REDUCE EMISSIONS BEYOND THE 'MITIGATED' LEVEL, AS DESCRIBED BELOW.*

BAAQMD has identified a set of feasible control measures for construction activities. Some control measures ("Basic Measures") should be implemented at all construction sites, regardless of size. Additional measures ("Enhanced Measures") should be implemented at larger construction sites (greater than 4 acres). Other controls ("Optional Measures") may be implemented if further emission reductions are deemed necessary by the Lead Agency.

The BAAQMD 1999 CEQA Guidelines recommends that the determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. If all of the applicable control measures will be implemented, then air pollutant emissions from construction activities would be considered a less than significant impact. If all of the appropriate control measures will not be implemented, then construction impacts would be considered to be significant. In addition, demolition activity must comply with the requirements of District Regulation 11, Rule 2 to be considered to have a **less than significant** impact.

MITIGATION MEASURES

Mitigation Measure 3.2-2: *To reduce construction related emissions, the City shall require future project developers to implement the following measures:*

- *All active construction areas shall be watered at least two times per day.*
- *All unpaved access roads, parking areas, and staging areas shall be watered at least three times daily or shall have non-toxic soil stabilizers applied.*
- *All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall maintain at least two feet of freeboard.*
- *All paved access roads, parking areas, and staging areas, as well as any track-out onto adjacent public roads shall be removed using water street sweepers at least once per day. The use of dry power sweeping is prohibited.*
- *All vehicle speeds on unpaved roads shall be limited to 15 mph.*
- *For all sites with riparian or wetland areas, install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.*
- *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*
- *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.*
- *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.*
- *Post a publicly visible sign at the construction site with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Air District's phone number shall also be visible to ensure compliance with applicable regulations.*

- *All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour or wind gusts exceed 25 miles per hour.*
- *Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction.*
- *Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.*
- *The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.*
- *All trucks and equipment, including their tires, shall be washed off prior to leaving the site.*
- *Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.*
- *Minimizing the idling time of diesel powered construction equipment to two minutes.*
- *The project developer shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent Nitrogen Oxides reduction and 45 percent Particulate Matter reduction compared to the most recent California Air Resources Board fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.*
- *Use low Volatile Organic Compound (i.e., Reactive Organic Gases) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).*
- *Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of Nitrogen Oxides and Particulate Matter.*
- *Requiring all contractors use equipment that meets the California Air Resources Board's most recent certification standard for off-road heavy duty diesel engines.*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.2-2 would require subsequent projects to implement basic construction mitigation measures, including the relevant measures identified in the BAAQMD 1999 CEQA Guidelines.. With implementation of these measures, construction related air quality impacts are reduced to a **less than significant** level.

Impact 3.2-3: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) (Potentially Significant)

As previously discussed, a main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in

Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development. As discussed under Impact 3.2-1, many of the Housing Element programs will not have a substantial affect on air quality.

The Housing Element contemplates specific actions that would accommodate increased development densities and intensities potentially having an effect on the air quality. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an AHO district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (30 units per acre) for senior housing on the five AHO sites. Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks. Because the Housing Element programs accommodate increased development densities and intensities that could increase a criteria pollutant or ozone precursor, the future development potential of the AHO sites was analyzed quantitatively. The analysis includes Scenario 1 and Scenario 2, as previously described in Chapter 2.0, Project Description. Table 3.2-3 presents information for each scenario. The emissions were compared to the BAAQMD thresholds as established in the 1999 CEQA Guidelines. The results of the quantitative analysis are presented under Impact 3.2-1, which shows that development allowed under the Housing Element has the potential to exceed adopted thresholds in an unmitigated condition. The exceedance would be a cumulatively considerable net increase in a criteria pollutant if measures could not be taken to reduce the emissions. However, mitigation was input into the model that would reduce emissions to the extent possible. Mitigation inputs included the following:

Area Source:

- Natural gas fireplaces/stoves
- Low Volatile Organic Compound architectural coatings (150 g/L)

Energy Source

- Install high efficiency appliances (refrigerator, fans, washers)

Indoor Water Use

- Install low-flow faucets, toilets, showers
- Use water-efficient irrigation systems

As shown in Tables 3.2-6 and 3.2-7 under Impact 3.2-1, emissions are significantly reduced with the inclusion of the components identified in Mitigation Measure 3.2-1 and would be quantitatively below the thresholds of significance established by BAAQMD. Implementation of the proposed project with Mitigation Measure 3.2-1 would have a **less than significant** impact and is **less than cumulatively considerable** relative this topic.

Impact 3.2-4: Potential to conflict with or obstruct implementation of the applicable air quality plan (Less than Significant)

CEQA requires lead agencies to determine whether a project is consistent with all applicable air quality plans. The most current plan applicable to Novato is BAAQMD's 2010 Clean Air Plan. The 2010 Clean Air Plan's first primary goal is to protect air quality. The 2010 Clean Air Plan contains 55 control measures aimed at reducing air pollution in the Bay Area. Eighteen of the measures are

stationary source measures that BAAQMD adopts and enforces. The proposed project does not include stationary sources. Ten measures are mobile source measures (MSMs) that BAAQMD implements through a variety of programs and collaborations; since CARB is responsible for establishing statewide motor vehicle emissions standards, the majority of MSMs rely heavily on incentive-based programs to achieve voluntary reductions. Seventeen measures are transportation control measures (TCMs) that are implemented at the regional level by BAAQMD and/or through implementation of the Transportation 2035 Plan.

Ten measures are land use and local impacts measures and are intended to address air quality at the local level, by local agencies and development projects. The BAAQMD encourages project developers and lead agencies to incorporate these Land Use and Local Impact (LUM) measures and Energy and Climate measures (ECM) into proposed project designs and plan elements. The first six measures LUM 1 through LUM 6) require BAAQMD to develop specific programs and systems related to goods movement, indirect source review rule, CEQA guidelines and thresholds, providing guidance to local governments, a system to track cumulative health risks, and expanded air quality monitoring. The final four measures (ECM-1 through ECM-4) address energy and climate through encouraging energy efficiency, promoting distributed renewable energy generation, promoting methods to mitigate the 'urban heat island,' and promoting low-Volatile Organic Compound emitting shade trees. The Energy and Climate Measures are applicable to the Housing Element to the extent that they address residential development.

If approval of a project would not cause the disruption, delay or otherwise hinder the implementation of any air quality plan control measure, it may be considered consistent with the 2010 Clean Air Plan. Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path.

The Housing Element is one of seven state-mandated General Plan elements. The majority of measures identified by the 2010 Clean Air Plan are directly related to transportation and air quality and, thus, are addressed in the circulation and conservation elements of a general plan. State law requires the Housing Element to address specific housing needs, including energy conservation in residential development. The proposed project includes HO Policy 4.1, which provides for resource conservation by encouraging housing types and designs that use renewable and/or sustainable materials, cost-effective energy conservation measures and fewer resources (water, electricity, etc.), and HO Policy 4.2, which promotes the use of sustainable and/or renewable materials and energy technologies (such as solar and wind) in new and rehabilitated housing when possible. The Housing Element also includes HO Program 4.a, which promotes solar design, and HO Program 4.B which requires consistent implementation of the City's Green Building Program to encourage the use of green building materials and energy conservation. The Green Building Program includes measures to reduce the urban heat island effect. The proposed project implements the applicable measures contained in the 2010 Clean Air Plan related to energy conservation in residential development through HO Policies 4.1 and 4.2 and HO Programs 4.a and 4.b.

The General Plan has a projection at buildout of 26,509 dwelling units based on the land use inventory. There are currently 21,158 dwelling units in Novato. The Housing Element has identified sites for an estimated 416 new dwelling units, not including the five housing opportunity sites.

With the development of the five housing opportunity sites, the Housing Element would result in a development potential of between 646 and 789 new dwelling units. This development potential is well within the General Plan buildout and regional housing need allocation projections, which are used to develop population growth projections and transportation plans for the region that are used in developing the applicable air quality plan.

The 2010 Clean Air Plan's second primary goal is to address public health. The 2010 Clean Air Plan addresses public health through identifying control measures to maximize the reduction in population exposure to air pollutants and by including a category titled Land Use and Local Impacts Measures that is intended to address localized impacts of air pollution and to help local jurisdictions to pursue transit-oriented infill development in priority areas. In terms of protecting public health, this EIR identifies potential air quality impacts to sensitive receptors. The operational effects of implementing the project would not result in long-term pollutant emissions that exceed adopted thresholds, as described under Impact 3.2-1. As described under Impact 3.2-4, the proposed project would not expose sensitive receptors to toxic air contaminants.

The 2010 Clean Air Plan's final primary goal of protecting the climate is to reduce greenhouse gases to protect the climate. The proposed project would not result in a significant impact to greenhouse gas emissions/climate change as discussed in Section 3.6 of this Draft EIR.

The Housing Element does not include any measures or identify potential development sites that would preclude or interfere with implementation of the 2010 Clean Air Plan. As described above, the proposed project and this EIR address public health and climate change. Mitigation measures provided in this EIR, particularly Mitigation Measures 3.2-1 through 3.2-3, will further reduce potential air quality impacts and implement relevant BAAQMD requirements. Therefore, the proposed project would not conflict with or obstruct implementation of the 2010 Clean Air Plan. This is a **less than significant** impact with implementation of Mitigation Measures 3.2-1 through 3.2-3.

Impact 3.2-5: Potential to expose sensitive receptors to substantial pollutant concentrations (Potentially Significant)

Controlling toxic air contaminants (TACs) became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter.

The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to a Federal Highways Administration analysis using EPA's MOBILE6.2 model, even if vehicle activity (i.e. vehicle miles traveled) increases by 145 percent, a combined reduction of 72 percent in the total annual

emission rate for the priority Mobile Source Air Toxics is projected from 1999 to 2050. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that Mobile Source Air Toxics trends in California will decrease consistent with or more than the U.S. EPA's national projections.

Currently, the CARB monitors toxics throughout California from 20 monitoring sites. There is no toxic air monitoring site located in the City of Novato. The closest toxic air monitoring site to Novato is in San Rafael. As air toxics research continues, new tools and techniques will be developed for assessing health outcomes as a result of lifetime air toxics exposure.

Health risks associated with TACs are most pronounced in the areas adjacent to the freeway segments (i.e. U.S. 101). Under the Community Air Risk Evaluation (CARE) program, the BAAQMD has designated certain areas as "Impacted Communities" if the following occur: the areas (1) are close to or within areas of high TAC emissions, (2) have sensitive populations, defined as youth and seniors, with significant TAC exposures, and (3) have significant poverty. The City of Novato is not mapped by the BAAQMD as an Impacted Community under the CARE program.

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development. As discussed under Impact 3.2-1, many of the Housing Element programs will not have a substantial affect on air quality, including toxic air contaminants.

The following Housing Element programs contemplate specific actions that would accommodate increased development densities and intensities, which could expose sensitive receptors to toxic air emission. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an AHO district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (up to 30 units per acre) for senior housing on the five AHO sites. Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks. Because the Housing Element includes programs that would accommodate increased development densities and intensities that could affect air quality, the future development potential of the AHO sites is analyzed below.

Sites 2 (Landing Court), 3 (Redwood Boulevard), and 4 (7506 Redwood Boulevard) are located proximate to the US 101 (a TAC source). Sites 2 through 4 are within the "Minimum Separation Recommendation on Siting Sensitive Land Uses" as outlined in the Air Quality and Land Use Handbook: A Community Health Perspective (CARB 2005). The CARB recommends avoiding siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 vehicles per day (CARB2005). The CARB (2005) indicates that the Range of Relative Cancer Risk is 300 to 1,700 (expressed as an estimate of the increased chances in a million of getting cancer due to facility emissions over a 70-year lifetime) for Freeways and High-Traffic Road sources. The basis for the CARB "Siting Recommendations" is traffic-related studies where the additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet (CARB 2005). California freeway studies show about a 70 percent drop off in particulate pollution levels at

500 feet (CARB 2005). The CARB states that these are advisory recommendations, and that site-specific health risk analysis is required to determine the actual health risk on a particular site. The CARB also notes that diesel particulate associated with freeways will decrease over time as cleaner technology phases in over time. As such, the distance separation recommendations would likely change in the future.

US 101 ranges from approximately 90,000 to 130,000 average daily trips in the vicinity of Sites 2, 3, and 4 (Caltrans 2012). Development of sensitive receptors within the minimum separation recommendations could expose sensitive receptors to health risks associated with TACs. This is a **potentially significant** impact.

MITIGATION MEASURES

Mitigation Measure 3.2-3: *As part of the City's design review and entitlement process for Sites 2, 3, and 4, the project applicant shall retain a qualified professional to perform a health risk assessment to determine potential impacts associated with exposure to Toxic Air Contaminants. If Toxic Air Contaminant exposure levels exceed acceptable levels or indicate a significant increase in cancer risk, the health risk assessment shall identify measures that the development project will implement to reduce exposure to acceptable levels. Potential measures include development setbacks (e.g., increased distance from US 101), setbacks of ground floor units (e.g., use ground floor for parking, storage, office space) if upper floor units are at acceptable exposure levels, indoor air filtration equipment, disclosure statements to prospective buyers or renters notifying them of predicted health risks and identifying the importance of maintenance of any specialized equipment and keeping windows and doors shut during peak traffic periods).*

SIGNIFICANCE AFTER MITIGATION

Implementation of the Mitigation Measure 3.2-3 would require a project that is located proximately to a TAC source (i.e. freeways) to have a qualified professional assessment the location for health risks on sensitive receptors. The qualified professional would provide recommendations after determining the actual health risks. This mitigation measure would reduce this potential impact to a **less than significant** level.

Impact 3.2-6: Potential to create objectionable odors affecting a substantial number of people (less than significant)

Objectionable odors can be generated from certain types of commercial and/or industrial land uses. In general, residential land uses are not associated with odor generation, but they do serve as sensitive receptors.

The BAAQMD 1999 CEQA Guidelines recommendation for assessing plan level odor impacts is to "identify the location of existing and planned odor sources in the plan area and policies to reduce potential odor impacts in the plan area." There are not any existing or planned sources of odors within the City of Novato that have complaint histories. The proposed project would not result in any significant sources of odor. Therefore, this is a **less than significant** impact.

REFERENCES

BAAQMD 2010. *Bay Area 2010 Clean Air Plan.* Adopted September 15, 2010.

BAAQMD 1999. *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans.*

BAAQMD 2013. http://www.baaqmd.gov/

CARB 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* California Environmental Protection Agency, California Air Resources Board. April 2005.

This section provides a background discussion of the geomorphic provinces, bioregions, land cover types (CWHRS), and special status species found in Novato. This section is organized with an existing setting, regulatory setting, and impact analysis. One comment was received during the public review period for the Notice of Preparation regarding this topic.

- Wild life distribution or elimination (red legged frog, owls, deer, cows, fox & wild turkey).

Methods

Biological resources within Novato were identified through field reconnaissance (June 18, 2013), a review of pertinent literature, and database queries. The primary sources of data referenced for this section is derived from the following:

- California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (Skinner, Mark W. and Pavlik, Bruce M., Eds. 2001);
- A Manual of California Vegetation (Sawyer, John and Keeler-Wolf, Todd 1995);
- Terrestrial vegetation of California (Barbour and Major 1988);
- Jepson Manual: Higher Plants of California (Hickman, James C. 1993);
- "Special Plants List." Natural Diversity Database. (California Dept. of Fish and Game);
- "Special Animals List." Natural Diversity Database. (California Dept. of Fish and Game);
- "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database. (California Dept. of Fish and Game).
- Army Corps of Engineers Wetland Delineation Manual. (ACOE 1987)

Key Terms

The following key terms are used throughout this section to describe biological resources and the framework that regulates them:

Hydric Soils. One of the three wetland identification parameters, according to the federal definition of a wetland, hydric soils have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season. There are approximately 2,000 named soils in the United States that may occur in wetlands.

Hydrophytic Vegetation. Plant types that typically occur in wetland areas. Nearly 5,000 plant types in the United States may occur in wetlands. Plants are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS) and include such species as cattails, bulrushes, cordgrass, sphagnum moss, bald cypress, willows, mangroves, sedges, rushes, arrowheads, and water plantains.

Sensitive Natural Community. A sensitive natural community is a biological community that is regionally rare, provides important habitat opportunities for wildlife, are structurally complex, or are in other ways of special concern to local, state, or federal agencies. CEQA identifies the

elimination or substantial degradation of such communities as a significant impact. The California Department of Fish and Game (CDFG) tracks sensitive natural communities in the California Natural Diversity Database (CNDDB).

Special-Status Species. Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special status species" in this EIR, following a convention that has developed in practice but has no official sanction. For the purposes of this assessment, the term “special status” includes those species that are:

- Federally listed or proposed for listing under the Federal Endangered Species Act (50 CFR 17.11-17.12);
- Candidates for listing under the Federal Endangered Species Act (61 FR 7596-7613);
- State listed or proposed for listing under the California Endangered Species Act (14 CCR 670.5);
- Species listed by the U.S. Fish and Wildlife Service (USFWS) or the CDFG as a species of concern (USFWS), rare (CDFG), or of special concern (CDFG);
- Fully protected animals, as defined by the State of California (California Fish and Game Code Section 3511, 4700, and 5050);
- Species that meet the definition of threatened, endangered, or rare under CEQA (CEQA Guidelines Section 15380);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.); and
- Plants listed by the California Native Plant Society (CNPS) as rare, threatened, or endangered (List 1A and List 2 status plants in Skinner and Pavlik 1994).

Wetlands and Other Waters of the U.S. Wetlands are ecologically complex habitats that support a variety of both plant and animal life. In a jurisdictional sense, the federal government defines wetlands in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). Under normal circumstances, the federal definition of wetlands requires three wetland identification parameters be present: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include freshwater marsh, seasonal wetlands, and vernal pool complexes that have a hydrologic link to other waters of the U.S (see definition below for "other waters of the U.S."). The U.S. Army Corps of Engineers (USACE) is the responsible agency for regulating wetlands under Section 404 of the Clean Water Act, while the Environmental Protection Agency (EPA) has overall responsibility for the Act.

The CDFG does not normally have direct jurisdiction over wetlands unless they are subject to jurisdiction under Streambed Alteration Agreements or they support state-listed endangered species; however, CDFG is a trustee agency, meaning that they manage the wildlife and habitats of the state in trust pursuant to California law.

"Other waters of the U.S." refers to those hydric features that are regulated by the Clean Water Act but are not wetlands (33 CFR 328.4). To be considered jurisdictional, these features must exhibit a defined bed and bank and an ordinary high-water mark. Examples of other waters of the U.S. include rivers, creeks, intermittent and ephemeral channels, ponds, and lakes.

3.3.1 ENVIRONMENTAL SETTING

The City of Novato is located in north Marin County in the San Francisco Bay Area. Novato's borders are characterized by geographical features including Mount Burdell to the north, Big Rock Ridge to the west, Indian Valley open space to the southwest, Ignacio Valley, Pacheco Valle, and Loma Verde open space to the south, Bel Marin Keys wetlands to the southeast, and the bay plains and Petaluma River to the northeast. Urban development in the city is primarily located in the flat, northwest-trending valley that follows Novato Creek, Vineyard Creek, Warner Creek, and other tributaries flowing southeast from the hills to San Pablo Bay.

BIOREGIONS

Novato is located within the Bay Area/Delta bioregion. A brief description of the Bay Area/Delta bioregion is presented below.

Bay Area/Delta Bioregion: The Bay Area/Delta Bioregion extends from the Pacific Ocean to the Sacramento Valley and San Joaquin Valley bioregions to the northeast and southeast, and a short stretch of the eastern boundary joins the Sierra Bioregion at Amador and Calaveras counties. The bioregion is bounded by the Klamath/North Coast on the north and the Central Coast Bioregion to the south. The Bay Area/Delta Bioregion is one of the most populous areas of the state, encompassing the San Francisco Bay Area and the Sacramento-San Joaquin River Delta. The water that flows through the Delta supplies two-thirds of California's drinking water, irrigating farmland, and sustaining fish and wildlife and their habitat. The bioregion fans out from San Francisco Bay in a jagged semi-circle that takes in all or part of 12 counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano, Sonoma, and parts of Sacramento, and Yolo. The habitats and vegetation of the Bay Area/Delta Bioregion are as varied as the geography.

CALIFORNIA WILDLIFE HABITAT RELATIONSHIP SYSTEM

The California Wildlife Habitat Relationship (CWHR) habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly-occurring birds, mammals, reptiles and amphibians. When first published in 1988, the classification scheme had 53 habitats. At present, there are 59 wildlife habitats in the CWHR System: 27 tree, 12 shrub, 6 herbaceous, 4 aquatic, 8 agricultural, 1 developed, and 1 non-vegetated.

According to the California Wildlife Habitat Relationship System there are fourteen cover types (wildlife habitat classifications) within Novato out of 59 found in the state. These include: Annual Grassland, Barren, Blue Oak Woodland, Cropland, Coastal Oak Woodland, Coastal Scrub, Douglas Fir, Eucalyptus, Lacustrine, Mixed Chaparral, Montane Hardwood, Montane Riparian, Saline Emergent Wetland, and Urban, and Water. A brief description of each cover type in Novato follows. Figure 3.3-1 illustrates land cover types based on the CWHR.

Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. Climatic conditions are typically Mediterranean, with cool, wet winters and dry, hot summers. The length of the frost free season averages 250 to 300 days (18 to 21 fortnights). Annual precipitation is highest in northern California.

Barren habitat is defined by the absence of vegetation. Any habitat with <2% total vegetation cover by herbaceous, desert, or nonwildland species and <10% cover by tree or shrub species is defined this way. The physical settings for permanently barren habitat represent extreme environments for vegetation. An extremely hot or cold climate, a near-vertical slope, an impermeable substrate, constant disturbance by either human or natural forces, or a soil either lacking in organic matter or excessively saline can each contribute to a habitat being inhospitable to plants. This barren habitat includes the impermeable surfaces associated with the buildings, roadways, and sidewalks.

Blue oak woodland habitat is usually associated with shallow, rocky, infertile, well-drained soils from a variety of parent materials. The climate is Mediterranean, with mild wet winters and hot dry summers. Average annual precipitation varies from 20 to 40 inches over most of the range, although extremes are noted from 10 to 60 inches. Mean temperatures range from 75-96 F in summer to 29-42 F in winter. The growing season ranges from 6 months in the north to the entire year in the south, with 175 to 365 frost-free days.

Cropland includes a variety of sizes, shapes, and growing patterns. Croplands are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Climate influences the type of crops grown. Cropland in Novato is primarily located along State Route 37 and consists of former bayland areas cultivated for hay production. **Coastal Oak Woodland** occurs in the coastal foothills and valleys throughout the northern and southern coast range, and the transverse and peninsular range of southern California. They occur at elevations from just above sea level near the immediate coast to about 1525 m (5000 ft) in the interior regions, especially in southern California. Precipitation occurs in the milder winter months, almost entirely as rainfall, followed by warm to hot, dry summers. Near the coast, the summers are tempered by fogs and cool, humid sea breezes. Mean annual precipitation varies from about 100 cm (40 in) in the north to about 38 cm (15 in) in southern and interior regions. Mean minimum winter temperatures are 2 to 7 C (29 to 44 F), and the mean maximum summer temperatures are 24 to 36 C (75 to 96 F). The growing season ranges from six months (180 frost-free days) in the north to the entire year in mild coastal regions to the south. The soils and parent material on which coastal oak woodlands occur are extremely variable. Coastal oak woodlands generally occur on moderately to well-drained soils that are moderately deep and have low to medium fertility.

Coastal Scrub occurs discontinuously in a narrow strip throughout the length of California usually within about 45 km (20 mi) of the ocean. Elevation ranges from sea level to about 900 m (3000 ft). Coastal Scrub seems to tolerate drier conditions than its associated habitats. It is typical of areas with steep, south-facing slopes; sandy, mudstone or shale soils; and average annual rainfall of less than 30 cm (12 in). However, it also regularly occurs on stabilized dunes, flat terraces, and moderate slopes of all aspects where average annual rainfall is up to 60 cm (24 in). Stand composition and structure differ markedly in response to these physiographic features.

Douglas fir habitat is typically found in hot, dry summers and cool, mild, wet winters. Temperatures range from 57-72 F in the summer to 32-46 F in the winter. Annual precipitation varies from 24-27 in, generally less than 15 percent falling during summer. Precipitation increases inland and at higher elevations. Snowfall ranges from 2 to 31 inches and rarely persists later than June. Topography is characterized by rugged, deeply dissected terrain and steep slopes, especially toward the south. Major soil types are sedimentary granitic, and Ultramafic parent materials of gabbro, peridotite, and serpentine.

Eucalyptus habitats have been extensively planted throughout the state since their introduction in 1856. They are found in highly variable site characteristics, but generally on relatively flat or gently rolling terrain, occasionally in the foothills. Climatic conditions are typically Mediterranean, characterized by hot, dry summers and cool, mild winters. Precipitation ranges from approximately 12 to 24 inches. Temperature regimes range from a 43 F to 73 F.

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. These habitats may occur in association with any terrestrial habitats, Riverine or Fresh Emergent Wetlands. They may vary from small ponds less than one hectare to large areas covering several square kilometers. Depth can vary from a few centimeters to hundreds of meters. Typical lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes and ponds (including vernal pools) so shallow that rooted plants can grow over the bottom. Most permanent lacustrine systems support fish life; intermittent types usually do not.

Mixed Chaparral occurs on all aspects, but at lower elevations, it generally is found on north-facing slopes. Generally, it occurs on steep slopes and ridges with relatively thin, well-drained soils. Soils can be rocky, sandy, gravelly or heavy. The Mediterranean climate is characterized by cool, wet winters and hot, dry summers. Total rainfall is 38 to 63 cm (15 to 25 in) with less than 20 percent falling during the summer.

Montane hardwood habitat is found on a wide range of slopes, especially those that are moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed, and well drained. Soil depth ranges from shallow to deep. Summer temperatures vary between 68 and 77 F and in winter vary from 37 to 45 F. Frost-free days range from 160 to 230. Annual precipitation varies from 110 inches in the northern Coast Range to 36 inches in the mountains of southern California.

Montane Riparian areas are found associated with montane lakes, ponds, seeps, bogs and meadows as well as rivers, streams and springs. Water may be permanent or ephemeral. The

growing season extends from spring until late fall, becoming shorter at higher elevations. Most tree species flower in early spring before leafing out.

Saline Emergent Wetland habitat occurs along the margins of bays, lagoons, and estuaries sheltered from excessive wave action. At their lower margin they are exposed once every 24 hours; whereas, at their upper margin, submergence is short and infrequent, followed by weeks or months of continuous exposure. Soil salinity varies from that of seawater because of lagoon closure and evaporation, to brackish at sites influenced by heavy precipitation and run-off. Soils consist of thin veneers of fine silts, clays, and scattered plant remains. Saline emergent wetlands occur above intertidal sand and mud flats and below upland communities not subject to tidal action. The upper part of estuaries grade into brackish and freshwater marshes.

Urban habitats are not limited to any particular physical setting. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily-developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. A distinguishing feature of the urban wildlife habitat is the mixture of native and exotic species.

EXISTING RESOURCES

Wildlife, Vegetation, and Habitats

Novato contains a wide range of plant and animal communities, including:

- *Diked Baylands* which are those lands that were historically tidal marsh and were diked for agricultural use. These lands contain seasonal wetlands and some sloughs, which have important habitat value. These lands also filter runoff to the Bay thereby improving water quality, and they serve as ponding basins for runoff.

  Seasonal wetlands provide essential feeding, nesting, and roosting habitat at a time of year when California's limited wetland acreage must support a much larger bird population. The seasonal wetlands play a critical role in supporting migratory shorebirds. Extensive surveys of seasonal wetlands conducted by the U.S. Fish and Wildlife Service indicate that 19 species of migratory waterfowl and 20 species of migratory shorebirds use these wetlands for feeding and roosting in the winter.

- *Saltwater and brackish water marshland*, found along the lower reaches of Novato Creek, the Petaluma River, and the shoreline of San Pablo Bay, where fresh water mixes with Bay saltwater. The marshes in the area, in combination with other marshland communities in the San Francisco Bay Area, represent by far the largest estuary still existing along California's coastline, and provide essential resting, feeding, and wintering habitat for millions of birds of the Pacific Flyway extending from Canada to Mexico, as well as providing habitat for a range of species.

- *Freshwater wetlands* which are found where fresh streamwater or stormwater runoff permanently or seasonally inundates low-lying areas. Freshwater wetlands are typically among the most productive wildlife habitats in California, supporting a variety of birds, small mammals, reptiles, and amphibians.

- *Riparian habitat* which is found along the upper portions of Novato Creek and its tributaries. The complex structure and diversity of vegetation within riparian areas, as well as their close proximity to water, creates an extremely productive habitat for numerous mammal, bird, and reptile species. Riparian habitat is scarce because it only forms along watercourses and lakes, and because in California much of this habitat has been lost to agricultural uses, urbanization, and channelization for flood control. Shade provided by trees along watercourses helps maintain cooler water temperatures, retarding algae growth and enhancing fish habitat.

- *Oak woodlands* which are found on north-facing slopes and in canyons and ravines on more exposed slopes. In the Novato area, the proximity of oak woodland to open grassland and riparian habitat provides shelter and cover located close to feeding areas. This promotes a great diversity of wildlife, including a wide variety of animal, bird, reptile, and insect species. There are also forested areas, including redwood groves, within the oak woodlands.

- *Grassland/oak savannah*, in drier upland areas, interspersed with oak woodland, in the northern portion of the Novato area. Most oak savannah lands in the area have been developed with urban uses, and few oaks have survived. The deep root system of oak trees make the savannah community particularly valuable for erosion control on slopes that otherwise support only grassland.

- *Agricultural land*, in Novato's valley areas and bayside plains that have been leveed. Important agricultural crops grown in the area include nut crops, vineyards, fruit orchards, and field crops. Agricultural land can also provide valuable wildlife habitat, including critical habitat for migrating waterfowl and shorebirds during the winter. The State Department of Conservation has classified much of Novato’s agricultural land, particularly bayfront land, as Farmland of Local Importance (i.e., land currently in agricultural production that meets the criteria for Prime Farmland or Farmland of Statewide Importance, but is not irrigated). Some lands along the Bay produce oat hay, an important animal food source for ranches in Central and West Marin. Within the City limits, one active vineyard, the Pacheco Ranch (235 Alameda del Prado), and one small chicken ranch (1521 Hill Road) is under a Williamson Act contract, which requires the property owner to maintain the land in agricultural use in exchange for reduced property taxes.

- *Urban* landscaped areas, concentrated in the Novato Valley where they occupy former grassland, oak woodland, and savannah areas. Exotic trees, shrubs, flowers, and vegetables in these areas have replaced native plants, providing habitat for many birds, rodents, mammals, reptiles, and insects.

According to data from the State Department of Fish and Game and California Native Plant Society, these habitats may support a variety of rare or endangered plant and animal species. Sensitive species such as the California black rail, California clapper rail, and salt marsh harvest mouse have been found in the Novato area, particularly in bayfront areas.

Streams and Other Bodies of Water

Novato contains a network of rivers, streams, creeks, lakes, and other water bodies, including:

- The *Petaluma River*, which originates approximately 20 miles north of the City of Petaluma and forms the northeast border of the Novato area. Gravel products are transported to Petaluma from San Pablo Bay via the river. Marshlands along the Petaluma River have been considered for nomination as a federal estuarine sanctuary.

- *San Pablo Bay*, which borders the eastern edge of the area. This shoreline extends for approximately seven miles. San Pablo Bay is a navigable waterway that provides access to San Francisco Bay and the Pacific Ocean.

- *Novato Creek*, which flows from west to east and bisects the area. The watershed of Novato Creek encompasses the majority of the area, and its drainage basin encompasses 44 square miles.

- Numerous streams flow into Novato Creek, including Warner Creek, with a 5.1-square-mile drainage; Arroyo Avichi, with a 1.6-square-mile drainage; and Arroyo San Jose, with a 5.7-square-mile drainage, and Vineyard Creek, with a 2.1 square-mile drainage.

  In addition to these major waterways, numerous local drainage channels and storm drains discharge into Novato Creek and its tributaries. Pacheco Creek flows through the southern part of Novato.

- *Rush Creek*, which flows eastward from Highway 101 to the Petaluma River, north of the City limits.

- *Stafford Lake*, a reservoir and headwater for Novato Creek approximately 11 miles upstream from San Pablo Bay. The reservoir, which was established in 1951, stores water for domestic use and reduces flooding along Novato Creek. The reservoir has a storage capacity of 4,430 acre-feet and a water surface area of 245 acres.

Figure 3.3-2 illustrates the hydrology of the Novato area.

Wetlands

Wetlands in the area include saltwater and brackish water-marshland, and freshwater wetland. The marshes and much of the freshwater wetlands habitat are part of the San Francisco Bay Estuary. Saltwater marsh communities occur in the upper intertidal zone of protected shallow bays, estuaries, and coastal lagoons. Brackish-water marshes occur at the mouth of large streams which enter northern San Pablo Bay, creating a gradual transition zone between salt marsh and riparian vegetation communities. Marshlands are very productive ecosystems which provide food,

cover, nesting and roosting habitat, generate organic matter to fuel aquatic food chains, and function as natural flood control and pollution filtration systems. The bayside plains adjacent to Novato Creek east of Highway 101, and those along the lower reaches of the Petaluma River and Miller Creek, are subject to tidal action and support saltwater marsh and brackish-water marsh biotic communities.

Many of the wetlands in the Novato area are seasonal freshwater wetlands occurring in areas that were once part of the Bay and have been diked off to provide agricultural land. Freshwater wetlands are typically among the most productive wildlife habitats in California. Their functions include providing food chain support, providing habitat for waterfowl, fish, and other wildlife, and moderating hydrologic processes.

SPECIAL-STATUS SPECIES

The following discussion is based on a background search of special-status species that are documented in the CNDDB, the CNPS Inventory of Rare and Endangered Plants, and the USFWS endangered and threatened species lists. The background search was regional in scope and focused on the documented occurrences within a one-mile radius of the city limits.

The search revealed documented occurrences of 25 special status species within Novato: nine plants, four invertebrates, one fish, seven birds, and threes mammals. In addition, there are two sensitive natural communities: Coastal Brackish Marsh and Northern Coastal Salt Marsh. Table 3.3-1 provides a list of these special-status species, their habitat, and current protective status. Figure 3.3-3 illustrates the location of each documented occurrence.

TABLE 3.3-1: SPECIAL STATUS SPECIES PRESENT OR POTENTIALLY PRESENT IN NOVATO

SPECIES	STATUS	HABITAT
PLANTS		
Amorpha californica var. napensis Napa false indigo	--;--;1B	Broadleaved upland forest, chaparral, cismontane woodland. Openings in forest or woodland or in chaparral. 150-2000M
Arctostaphylos montana ssp. Montana Mt. Tamalpais manzanita	--;--;1B	Chaparral, valley and foothill grassland. Serpentine slopes in chaparral and grassland. 160-760M.
Chloropyron molle ssp. Molle soft bird's-beak	FE;CR;1B	Coastal salt marsh. In coastal salt marsh with *Distichlis, Salicornia, Frankenia*, etc. 0-3M.
Fritillaria liliacea fragrant fritillary	--;--;1B	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine; various soils reported though usually clay, in grassland. 3-410M.
Hemizonia congesta ssp. congesta white seaside tarplant	--;--;1B	Coastal scrub, valley and foothill grassland. Grassy valleys and hills, often in fallow fields. 25-200M.
Hesperolinon congestum Marin western flax	FT;CT;1B	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 30-365M.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	--;--;1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Vernal pools and swales, adobe or alkaline soils. 5-950M.

SPECIES	STATUS	HABITAT
Polygonum marinense Marin knotweed	--;--;3.1	Marshes and swamps. Coastal salt marshes and brackish marshes. 0-10M.
Streptanthus glandulosus ssp. pulchellus Mount Tamalpais bristly jewel-flower	--;--;1.B	Chaparral, valley and foothill grassland. Serpentine slopes. 150-800M.
INVERTEBRATES		
Adela oplerella Opler's longhorn moth	--;--	From Marin County and the Oakland area on the inner Coast Ranges south to Santa Clara County. One record from Santa Cruz County. All but the Santa Cruz site is on serpentine grassland. Larvae feed on Playtstemon californicus.
Calicina diminua Marin blind harvestman	--;--	Known only from the type locality, Mount Burdell, Novato, Marin County. Known only from the type series. Serpentine endemic.
Talanites ubicki Ubick's gnaphosid spider	--;--	Known only from the type locality, Mount Burdell, Novato, Marin County. Known only from the type series. Serpentine endemic.
Tryonia imitator mimic tryonia (=California brackishwater snail)	--;--	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.
FISH		
Eucyclogobius newberryi tidewater goby	FE;CSC	Brackish water habitats along the California coast from Aqua Hedionda Lagoon, San Diego County to the Mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.
Pogonichthys macrolepidotus Sacramento splittail	--;CSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes. Slow moving river sections, dead end sloughs, requires flooded vegetation for spawning and foraging for young.
BIRDS		
Ardea Herodias great blue heron	MBTA; CSC	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.
Athene cuniculari Burrowing owl	FSC; CSC/ Raptor	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Elanus leucurus white-tailed kite	MBTA; CP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated dense-topped trees for nesting and perching.
Geothlypis trichas sinuosa saltmarsh common yellowthroat	MBTA; CSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.
Laterallus jamaicensis	--/CT	Tidal salt marshes associated with heavy growth of pickleweed;

SPECIES	STATUS	HABITAT
coturniculus California black rail		also occurs in brackish marshes or freshwater marshes at low elevations
Melospiza melodia samuelis San Pablo song sparrow	--; CSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the salcornia marshes; nests in grindelia bordering slough channels.
Rallus longirostris obsoletus California clapper rail	FE;CE	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.
MAMMALS		
Antrozous pallidus Pallid bat	--;CSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Corynorhinus townsendii Townsend's big-eared bat	--;CSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open hangins from walls and ceilings. Roosting sites limited. Extremely sensitive to human disturbance.
Reithrodontomy raviventris Salt-marsh harvest mouse	FE;CE	Only in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.

SOURCE: DFG CNDDB 2013

ABBREVIATIONS:

--	*NO STATUS*
FE	*FEDERAL ENDANGERED*
FT	*FEDERAL THREATENED*
FC	*FEDERAL CANDIDATE*
FSC	*FEDERAL SPECIES OF CONCERN*
FD	*FEDERAL DELISTED*
MBTA	*PROTECTED BY MIGRATORY BIRD TREATY ACT*
CE	*CALIFORNIA ENDANGERED SPECIES*
CT	*CALIFORNIA THREATENED*
CP	*CALIFORNIA FULLY PROTECTED UNDER §3511, 4700, 5050 AND 5515 FG CODE*
CSC	*CDFG SPECIES OF SPECIAL CONCERN*
CR	*CALIFORNIA RARE (PROTECTED BY NATIVE PLANT PROTECTION ACT)*
1B	*CNPS - RARE, THREATENED, OR ENDANGERED*
2	*CNPS - RARE, THREATENED, OR ENDANGERED IN CALIFORNIA, BUT MORE COMMON ELSEWHERE*
4	*CNPS - PLANTS OF LIMITED DISTRIBUTION - A WATCH LIST*

Special Status Communities

The search revealed documented occurrences of two sensitive natural communities within Novato and a brief description of each follows. Figure 3.3-3 illustrates the location of this natural community.

Coastal Brackish Marsh. Brackish marsh vegetation develops in shallow, standing or slow moving waters in coastal bays, estuaries, and coastal lagoons, where fresh water meets salt water in a tidal area. Salinity may vary daily and seasonally depending on the tide and the level of freshwater input. Brackish marsh usually integrates with salt marsh farther toward the saline water source,

and with freshwater marsh at the mouths of rivers. Much of the Sacramento-San Joaquin River delta is considered coastal brackish marsh due to the mixing of fresh and salt water.

Brackish marsh generally has species in common with both coastal salt marsh and freshwater marsh and is typically dominated by perennial, emergent, herbaceous plants up to six feet in height. The most common species are cattails (*Typha* spp.) and bulrush (*Scirpus* spp.), especially alkali bulrush (*Scirpus robustus*). Depending on the salinity, species of sedge (*Carex* spp.), rush (*Juncus* spp.), pickleweed, and others may be present.

Brackish marsh is extensively developed around Suisun Bay in Solano County (including Suisun Marsh and at the mouth of the Sacramento-San Joaquin River delta). Much of the brackish marsh communities around Novato are along the fringe of San Pablo Bay. As with the northern salt marsh communities, the altered hydrological conditions in the diked, non-tidal brackish communities often do not support many of the uncommon plant and animal species found in the more natural tidal marshes. However, such marshes can be highly important to other special-status wildlife species.

Northern Coastal Salt Marsh. Coastal salt marsh is restricted to the upper intertidal zone of protected shallow bays, lagoons, and estuaries. Salt marsh is a highly productive plant community consisting of plants that are tolerant of saline soils and regular tidal inundation. Diking and filling of marshlands for agriculture and development have severely diminished the acreage of the San Francisco Bay salt marshes. While only about 10 percent of the historic tidal marshes remain, substantial areas of valuable managed wetlands remain within the historic margins of the bay.

The salt marsh community is composed of relatively low-growing plants, ranging in height from several inches to over three feet. Plant composition changes with small differences in elevation along the edges of these marshes because of small differences in the frequency and duration of tidal inundation. Typically, bare mudflats are bordered by pure stands of the native cordgrass (*Spartina foliosa*) which at the mean high water level become replaced by a dense cover of pickleweed (*Salicornia virginica*). This vegetated marsh zone extending up to mean high water is commonly referred to as the low marsh community. The mid-marsh community typically occurs from about mean high water to mean higher high water. This zone is typically dominated by pickleweed, with some association of alkali heath (*Frankenia salina*), marsh rosemary (*Limonium californicum*), jaumea (*Jaumea carnosa*), sandspurreys (*Spergularia* spp.), and saltgrass (*Distichlis spicata*). Salt grass, marsh gumplant (*Grindelia stricta* var. *angustifolia*), and marsh rosemary dominate the upper marsh zone (above mean higher high water).

Coastal salt marsh communities also occur in non-tidal (diked) marshes. While sharing most of the dominant plant species, the altered hydrological conditions in the diked, non-tidal communities often do not support many of the rare or uncommon plant and animal species found in the more natural tidal marshes.

Several invasive, non-native cordgrasses (*Spartina alterniflora, S. densiflora, S. patens, and S. anglica*) have become established in San Francisco Bay. At present, the most significant invasions exist in south and central San Francisco Bay.

3.3.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the natural resources of the state and nation including the CDFG, USFWS, USACOE, and the National Marine Fisheries Service. These agencies often respond to declines in the quantity of a particular habitat or plant or animal species by developing protective measures for those species or habitat type. Federal and state agencies are increasingly involved with projects at the local level in San Francisco Bay area. The following is an overview of the federal, state and local regulations that are applicable to implementing the General Plan.

FEDERAL REGULATIONS

Federal Endangered Species Act

The Federal Endangered Species Act, passed in 1973, defines an endangered species as any species or subspecies that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Once a species is listed it is fully protected from a "take" unless a take permit is issued by the United Stated Fish and Wildlife Service. A take is defined as the harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct, including modification of its habitat (16 USC 1532, 50 CFR 17.3). Proposed endangered or threatened species are those species for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Migratory Bird Treaty Act

To kill, possess, or trade a migratory bird, bird part, nest, or egg is a violation of the Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., §703, Supp. I, 1989), unless it is in accordance with the regulations that have been set forth by the Secretary of the Interior.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668) protect these birds from direct take and prohibits the take or commerce of any part of these species. The USFWS administers the act, and reviews federal agency actions that may affect these species.

Clean Water Act – Section 404

Section 404 of the Clean Water Act (CWA) regulates all discharges of dredged or fill material into waters of the U.S. Discharges of fill material includes the placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include lakes, rivers, streams, intermittent drainages, mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Waters of the U.S. exhibit a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the USACOE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

The USACOE is the agency responsible for administering the permit process for activities that affect waters of the U.S. Executive Order 11990 is a federal implementation policy, which is intended to result in no net loss of wetlands.

Clean Water Act – Section 401

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant who is seeking a 404 permit to first obtain a water quality certification from the Regional Water Quality Control Board. To obtain the water quality certification, the Regional Water Quality Control Board must indicate that the proposed fill would be consistent with the standards set forth by the state.

Department of Transportation Act - Section 4(f)

Section 4(f) has been part of Federal law since 1966. It was enacted as Section 4(f) of the Department of Transportation (DOT) Act of 1966 and set forth in Title 49 United States Code (U.S.C.), Section 1653(f). In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C. Section 303. This law established policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites as follows:

> *It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. The Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if: a) There is no prudent and feasible alternative to using that land; and b) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

STATE REGULATIONS

Fish and Game Code §2050-2097 - California Endangered Species Act

The California Endangered Species Act (CESA) protects certain plant and animal species when they are of special ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

The CESA expands upon the original Native Plant Protection Act, resulting in enhanced legal protections for plants. To be consistent with Federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all previously designated "rare" animals into the Act as threatened species, but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Under State law, plant and animal species may be formally designated by official listing by the California Fish and Game Commission.

Fish and Game Code §1900-1913 California Native Plant Protection Act

In 1977 the State Legislature passed the Native Plant Protection Act (NPPA) in recognition of rare and endangered plants of the state. The intent of the law was to preserve, protect, and enhance endangered plants. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. The NPPA includes provisions that prohibit the taking of plants designated as "rare" from the wild, and a salvage mandate for landowners, which requires notification of the CDFG 10 days in advance of approving a building site.

Fish and Game Code §3503, 3503.5, 3800 - Predatory Birds

Under the California Fish and Game Code, all predatory birds in the order Falconiformes or Strigiformes in California, generally called “raptors,” are protected. The law indicates that it is unlawful to take, posses, or destroy the nest or eggs of any such bird unless it is in accordance with the code. Any activity that would cause a nest to be abandoned or cause a reduction or loss in a reproductive effort is considered a take. This generally includes construction activities.

Fish and Game Code §1601-1603 – Streambed Alteration

Under the California Fish and Game Code, CDFG has jurisdiction over any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. Private landowners or project proponents must obtain a “Streambed Alteration Agreement” from CDFG prior to any alteration of a lake bed, stream channel, or their banks. Through this agreement, the CDFG may impose conditions to limit and fully mitigate impacts on fish and wildlife resources. These agreements are usually initiated through the local CDFG warden and will specify timing and construction conditions, including any mitigation necessary to protect fish and wildlife from impacts of the work.

Public Resources Code § 21000 - California Environmental Quality Act

The California Environmental Quality Act (CEQA) identifies that a species that is not listed on the federal or state endangered species list may be considered rare or endangered if the species meets certain criteria. Under CEQA public agencies must determine if a project would adversely affect a species that is not protected by FESA or CESA. Species that are not listed under FESA or CESA, but are otherwise eligible for listing (i.e. candidate, or proposed) may be protected by the local government until the opportunity to list the species arises for the responsible agency.

Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFG. Additionally, the California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. List 1A contains plants that are believed to be extinct. List 1B contains plants that are rare, threatened, or endangered in California and elsewhere. List 2 contains plants that are rare, threatened, or endangered in California, but more numerous elsewhere. List 3 contains plants where additional information is needed. List 4 contains plants with a limited distribution.

California Wetlands Conservation Policy

In August 1993, the Governor announced the "California Wetlands Conservation Policy." The goals of the policy are to establish a framework and strategy that will:

- Ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.
- Reduce procedural complexity in the administration of State and federal wetland conservation programs.
- Encourage partnerships to make landowner incentive programs and cooperative planning efforts the primary focus of wetland conservation and restoration.

The Governor also signed Executive Order W-59-93, which incorporates the goals and objectives contained in the new policy and directs the Resources Agency to establish an Interagency Task Force to direct and coordinate administration and implementation of the policy.

LOCAL REGULATIONS

City of Novato General Plan

The adopted City of Novato General Plan identifies the following objectives, policies, and programs related to Land Use and Environment chapters:

LAND USE

LU Policy 4 Clustering of Development. Encourage clustering of development on sites with environmental constraints in order to achieve environmental goals and attain gross densities within the range of the land use designation. Clustering of development may

result in net densities on some portions of a site exceeding the maximum densities in LU Table 2.

LU Policy 9 Constraints Analysis. Assess environmental constraints when considering development of lands with high environmental value or significant hazards. Encourage development sponsors to use such Constraints Analysis in designing their projects, to avoid unnecessary expense in redesigning their project to incorporate the issues defined by Constraints Analysis. The Constraints Analysis expands the City's current development analysis on property. The property owner is being provided the option of submitting the Constraints Analysis prior to submittal of the project application and environmental documentation or submitting it with the environmental documentation. The Constraints Analysis is an analysis in addition to that required by CEQA.

ENVIRONMENT

Watercourses, Wetlands, and Baylands Areas

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

EN Program 1.1: Establish 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. 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.

Under this program, the City will permit uses in Stream Protection Zone that are allowed in the underlying zoning district on parcels that fall entirely within the zone. On parcels partially within the zone uses will be permitted in the Stream Protection Zone where it can be conclusively demonstrated that development on any other part of the parcel is not feasible or would have a more adverse effect on water quality, flood management, vegetation or wildlife habitat. In addition, the City will encourage other public agencies to provide conditions to protect and preserve the natural resource qualities of the watercourse area:

1. Water supply projects

2. Flood control projects

3. Maintenance of water channels and levees for erosion control, flood control, and other public purposes

The waterways shown on EN Map 1 constitute important physical, habitat, aesthetic, and recreational assets to the residents of Novato. The Stream Protection Zone will implement the goals and policies of the General Plan related to reducing flood risk and damage, and to protecting and preserving natural resources. It will also reduce flood losses; minimize indirect costs to government caused by development in flood hazard areas; preserve biological diversity and habitat; prevent erosion of stream banks; prevent siltation of stream waters; and generally conserve and protect woodland and wildlife resources in the Novato Area of Interest. Marin County's Streamside Conservation Areas provide similar protections for watercourses.

EN Policy 2 Vegetation in Watercourse Areas. Protect vegetation in watercourse areas.

EN Program 2.1: Require mitigation for loss of riparian vegetation. On-site mitigation is preferred wherever possible.

EN Program 2.2: Encourage planting of native vegetation and discourage planting of exotic, invasive vegetation.

EN Program 2.3: Develop educational programs to inform property owners about protecting native vegetation in watercourse areas.

(See EN Programs 1.1 and 5.2)

The largest concentration of riparian vegetation occurs where land along streams has not been developed. Native vegetation can be protected by minimizing disturbances, encouraging removal of non-native species such as eucalyptus, palm, broom and other exotic, invasive plants, and replacing them with native plants. Planted trees and shrubs should include a variety of species that would grow naturally in riparian areas.

EN 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.

EN Program 3.1: Refer [projects] [for] comment [by] the State Department of Fish and Game and Marin County Flood Control District [involving] any grading, filling, or construction proposal that would alter a watercourse shown on EN Map 1.

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.

(See EN Programs 1.1)

EN Policy 5 Habitat Restoration. Restore damaged portions of riparian areas to their natural state, wherever feasible.

EN 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.

EN 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.

EN Program 5.3: Encourage riparian restoration as part of permit approval.

EN Policy 7 Water Quality: Encourage protection of water resources from pollution and sedimentation, and preserve their environmental and recreation values.

EN Program 7.1: Develop practices to protect water quality and natural ecosystems in the Stream Protection area.

EN 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.

EN Program 9.1: The City shall establish programs and ordinances that develop a process for determining, regulating and permitting wetlands.

EN Policy 10 Wetlands Ecology. Preserve and enhance wetlands ecology.

EN 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.

EN 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.

See also LU Policy 9 for consideration of Constraints Analysis of wetlands areas, and policies and programs in other sections of the Environment Chapter. Implementation of this program should be coordinated with the appropriate state and federal authorities.

EN Program 10.3: Encourage wetlands restoration where appropriate.

Restoration of historic wetlands such as those at the Hamilton Field runway is contributing towards restoring those lands that experienced a significant loss (over 80 percent) in the Bay Area.

EN 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.

EN 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.

See LU Policy 9 regarding Constraints Analysis of Bayland Areas.

EN 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.

EN 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.

EN Program 12.2: Encourage protection of migratory and other birds, anadromous fish and endangered species.

EN Policy 14 Tidal Areas. Cooperate with State and Federal agencies to ensure that areas subject to tidal action remain in their natural state.

EN Policy 17 Inter-Agency Coordination. Facilitate coordination and consultation with other agencies with jurisdiction over the bay in the review of development and conservation proposals in the Bayland Overlay Zone.

EN Program 17.1: Provide information to applicants about agencies with jurisdiction over baylands.

Wildlife and Native Plant Protection

EN Policy 18 Species Diversity and Habitat. Protect biological resources that are necessary to maintain a diversity of plant and animal species.

EN 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.

EN 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.

Woodlands

EN Policy 23 Native Woodlands. Maintain age and species diversity of native woodlands, and preserve the health of trees and other vegetation wherever feasible.

EN Program 23.1: Require replacement of native trees/woodland with native species when projects result in the loss of woodland habitat.

(See EN Program 26.1)

EN 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.

EN Program 24.1: Consider adopting a Tree Management Program, establishing varieties, size and spacing requirements, maintenance standards, and priority planting schedules.

EN 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.

EN Program 25.1: Continue requiring the planting of trees in parking lots to provide shade and visual screening.

EN Program 25.2: Develop educational programs to inform property owners of good tree management practices.

EN Program 25.3: Adopt a tree preservation ordinance that incorporates the City's Heritage Tree Ordinance.

EN 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.

EN 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 Zoning Code

The Novato Zoning Code contains standards and regulations to protect biological resources. These standards are provided in Division 19.26, Hillside and Ridgeline Protection; Division 19.35,

Waterway and Riparian Protection; Division 19.36, Wetland Protection and Restoration; and Division 19.39, Woodland and Tree Preservation.

Division 19.26 is intended, in part, to protect the city's scenic resources and distinctive environmental setting by preserving ridgelines and scenic vistas in their natural state, limiting development in hillside areas, encouraging retention of natural topographic features and vegetation. Division 19.26 also seeks to reduce the potential for hazards and environmental degradation related to slope failure, increased erosion, sedimentation, stormwater run-off, and loss of vegetation. This Division applies to new development on parcels with an average slope of 10% or greater. Division 19.26 requires design review for the development of new structures on such parcels. Division 19.26 includes detailed standards and design criteria addressing development intensity (density/floor area ratio), lot configuration, terrain alteration, structure location and design, structure size, exterior lighting, architectural design, and building color and finish materials. Division 19.26 also includes a density reduction factor for new residential development, which reduces potential unit yield based on the slope characteristics of a site. The development standards, design criteria, and density reduction factor of the Division 19.26 strive to ensure new development is compatible with and blends into, to the extent feasible, Novato's natural hillside and ridgeline setting.

The purpose of Division 19.35 is to allow development, which is compatible with the important physical, habitat, aesthetic, and recreational functions of waterways, while ensuring that these functions and values are protected in perpetuity. Accordingly, this Division provides standards for the protection, maintenance, enhancement and restoration of streams and waterways in a manner which preserves and enhances their ecological integrity and resource functions and value. A key focus of this Division is the establishment of adequate buffer areas along watercourses to avoid flood hazards and maintain or expand storage capacity for flood waters; protect water quality and in-stream habitat; preserve, enhance and restore riparian habitat and adjacent wetlands and upland buffers; and, provide for continuous wildlife migration corridors connecting habitat areas. In particular, Division 19.35 establishes a 50-foot stream protection zone, which is intended to buffer waterways and riparian habitat from new development. A project that conforms to 50-foot stream protection zone does not trigger any particular review requirements or the application of specific development standards. However, if a project proposes to disturb or place structures or improvements with the stream protection zone, then such a project must obtain use permit approval and develop a stream management plan specifying measures to protect and maintain water quality and riparian habitat.

Division 19.36 provides procedures and standards for identifying and protecting wetland resources, and permitting wetland restoration, enhancement, and mitigation projects. The standards of this Division apply to all lands within the city that support wetlands as delineated by the U.S. Army Corps of Engineers under provisions of the Clean Water Act. The standards of this division do not apply to treatment wetlands or drainage ways considered "other waters" under the Clean Water Act. This Division is triggered where new development within 50 feet of a wetland or where a project would involve wetland fill/encroachment. A project that maintains a 50-foot distance from a Corps delineated wetland does not trigger the procedures and standards of

Division 19.36. However, a project inside 50-feet or involving the disturbance of delineated wetland would trigger the standards of Division 19.36, including a requirement to obtain a use permit. Through the use permit process a project would be required to comply with development standards and design criteria, including identifying an acceptable buffer area, the implementation of protection measures, such as fencing, landscaping with native vegetation, and erosion and sediment control. A project involving any permitted wetland fill would be required to mitigate lost wetland habitat at a minimum ratio of 2:1 for on-site replacement and a minimum ratio of 3:1 for off-site replacement.

Division 19.39 includes provisions intended to promote, in part, the conservation of native trees, forests and woodlands on private lands, and on both public and private lands during development. This Division applies to all proposed development and new land uses on properties with native tree, forest or woodland resources, as determined by the City's Community Development Director. The standards and criteria of this Division are applied to new development through the City's design review process, which is required of most new residential development in the city. The standards and criteria of this Division include requirements to prepare a tree inventory, create and implement a woodland conservation and management plan, retain a minimum of 75% of existing native trees under development conditions, and the on-site replacement of lost trees at a ratio of 3:1.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on biological resources if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- 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.

IMPACTS AND MITIGATION

As shown in Table 2.0-1 in the Project Description, the Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to biological resources. For example, HO Program 1.A calls for public outreach efforts to expand the public's understanding of the Housing Element and available programs and opportunities within the Housing Element. HO Program 2.A requires the inclusion of non-discrimination clauses in rental housing and deed-restricted housing constructed with City assistance. While these types of implementation programs are critical to the success of the Draft Housing Element, they would not result in any physical changes to the environment, and as such, have no potential to result in impacts related to biological resources. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B.

Programs 9.B, and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with biological resources. The analysis contained in this chapter provides a discussion regarding the potential for impacts on biological resources to result from the future development of the five AHO sites. The analysis includes three different scenarios (Scenario 1, Scenario 2, and Scenario 3) as described in Chapter 2.0, Project Description.

The development of these five AHO sites is not currently proposed; therefore, there is no detailed application or other information concerning site design or construction and operation of these projects. The five sites, described below, are assessed to the extent that information is available, including viewing the sites from the public right-of-way, utilizing map data, and reviewing available publications relevant to biological conditions in Novato. The assessment did not include biological reconnaissance or formal surveys of the AHO sites.

AHO Site 1: 1787 Grant Avenue, APN 141-201-48 and 141-201-12. The site is comprised of two parcels, a 1.90 acre parcel and an adjacent 0.25 acre parcel. This site is designated in the General Plan R10 – Medium Density Multi-Family Residential and zoned PD – Planned District. The site contains two aging commercial buildings presently occupied by a childcare center operating under a Use Permit. The site fronts Grant Ave. to the north and a 26-unit, two story, attached condominium development to the east. To the south and west, the site backs up to a heavily wooded segment of Novato Creek. The site is relatively flat and is characterized by a large lawn area, children's playground, daycare buildings, and a paved parking facility. Other than the wooded section of Novato Creek traversing the site and a few native oak trees the site does not

contain any remarkable natural habitat features.AHO Site 2: Landing Court, APN 153-162-59. The site is 2.11 acres designated in the General Plan for GC - General Commercial use and zoned PD – Planned District. The site fronts Landing Ct. opposite a light industrial/office complex and self-storage. To the north and west are single family residential homes. The site is completely paved, surrounded by a six foot fence topped with barbed wire, and used for the storage of RVs, boats and trucks. The site is essentially void of vegetation, with the exception of landscaping along property's frontage at Landing Court. There are no natural habitat features, such as native trees or wetlands, on this site. AHO Site 3: Redwood Boulevard, APN 125-202-18. This site is a 4-acre portion of a 39.92 acre vacant parcel, and is designated in the General Plan as Business and Professional Office and zoned PD – Planned District. The site is located approximately 900 feet north of the intersection of Wood Hollow Drive and Redwood Boulevard and a proposed rail station. Single family homes are to the west, the Buck Institute for Research on Aging to the north, which includes an approved, but yet to be constructed 130-unit multi-family development, and the Fireman's Fund office complex to the south.

The parcel within which Site 3 is located is characterized by an upland area featuring hills with oak woodlands and oak savannah grasslands and a lowland area hosting open grassland and several seasonal wetland areas. The larger parcel also contains natural drainage courses that show signs of erosion. Site 3 is situated in the lowland portion of the larger parcel and generally encompasses a flat area that appears to have been created by the import of fill soil. Site 3 hosts a single Oak tree, but otherwise does not host any remarkable vegetation. Site 3 extends into an area that appears to feature seasonal wetlands. Site 3 and the larger parcel of which it is a part are currently used for cattle grazing.

AHO Site 4: 7506 Redwood Boulevard, APN 143-011-08. This 1.76 acre vacant site is east of a shopping center. The site is flat and fronts Olive Avenue an arterial street.. The site is currently designated GC - General Commercial in the General Plan and zoned GC: D – General Commercial (Downtown).This site is located in an urbanized area featuring extensive commercial development. The site is largely devoid of any natural features and is covered by ruderal grasses and a large soil stockpile. A portion of the site is used as informal parking for employees of a nearby shopping center. The site abuts a partially piped drainage channel located along Olive Avenue. Another partially piped drainage channel is located along the site's northern boundary. These drainage channels exhibit aquatic vegetation.

AHO Site 5: 1905 Novato Boulevard, APN 140-011-66. This 1.06 acre site is flat and fronts Novato Boulevard, a major thoroughfare with transit lines. The site is near shopping, services, schools, library, parks and transit, in a walkable neighborhood with a bike lane on Novato Blvd. The site is developed with an aging commercial building presently occupied by Lifelong Medical Care This site is almost fully covered by the footprint of the medical services building and its associated paved parking facility, with the exception of perimeter landscaping. The site abuts Vineyard Creek, which is a tributary of the Novato Creek. The parking improvements at the site are within several feet of the top of bank of Vineyard Creek.

Approval of the proposed project would not directly approve or entitle any development or infrastructure projects. However, implementation of the Housing Element would facilitate future development of these five sites, which could result in adverse impacts to special-status plant and wildlife species, as well as sensitive natural habitat (riparian, waterway, and wetland areas) or wildlife movement corridors.

Impact 3.3-1: Potential to have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Potentially Significant)

Special-Status Plant Species

The search of the California Natural Diversity Data Base revealed documented occurrences of nine special status plant species within a one-mile radius of Novato. Table 3.3-1 provides a list of special-status plant species that are documented, their habitat, and current protective status. Figure 3.3-3 illustrates the location of each documented occurrence.

Of nine special status plants documented within a one-mile radius of Novato, two species are federally listed: soft bird's-beak (*Chloropyron molle ssp. Molle*) (endangered) and Marin western flax (*Hesperolinon congestum*) (threatened). The Marin western flax is also State listed as threatened. The remaining seven species are listed under the CNPS (1B or 3.1): Napa false indigo (*Amorpha californica var. napensis*), Mt. Tamalpais manzanita (*Arctostaphylos montana ssp. Montana*), fragrant fritillary (*Fritillaria liliácea*), white seaside tarplant (*Hemizonia congesta ssp. Congesta*), Baker's navarretia (*Navarretia leucocephala ssp. Bakeri*), Marin knotweed (*Polygonum marinense*), Mount Tamalpais bristly jewel-flower (*Streptanthus glandulosus ssp. Pulchellus*).

Habitats for these species vary and are associated with forest, woodland, chaparral, scrub, grassland, meadows, marshes, vernal pools, and some are limited serpentine and/or alkaline soils. Plant surveys of the five sites have not been performed; therefore presence or absence of these species, or other plants that are known to exist regionally, but not documented in Novato, cannot be confirmed.

The Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to special status species. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project

Description. Future multi-family development on these housing sites could result in impacts associated with special status species. The five sites are described below.

Site 1 (1787 Grant Avenue) is composed of a 1.90 acre parcel and an adjacent 0.25 acre parcel. Site 1 contains natural/undeveloped land composed of riparian woodland, riverine, and grassland habitat along Novato Creek where it traverses the site. This area has the potential for presence of special status plants. Program 9.B of the draft Housing Element establishes a provision specifying that future development on Site 1 shall maintain a minimum 20-foot setback from the top of bank of Novato Creek. This program requirement is intended to respect existing flood control and access easements held by the Marin County Flood Control and Water Conservation District that cross Site 1 and to buffer the riparian habitat along Novato Creek from future development. Site 2 (Landing Court) is a 2.11 acre site void of vegetation (barren), fully paved and fenced, and does not contain any natural habitat features. This site does not contain the possibility for the presence of special status plants. Future residential development at Site 2 would have no impact on special status plants. Site 3 (Redwood Boulevard) is a four acre site located on a 39.92 acre parcel that contains natural/undeveloped land composed of oak woodland, grassland, and seasonal wetlands and drainage courses. Site 3 is primarily a flat, grassland area and includes a portion of a nearby seasonal wetland. Site 3 and the larger parcel of which it is a part have the potential for presence of special status plants. Site 4 (7506 Redwood Boulevard) is a 1.76 acre vacant site that is mostly flat, with the exception of a soil stockpile from past development on adjacent sites. The site is covered by ruderal grasses and abuts a partially culverted drainage ditch along Olive Avenue and another partially piped channel located at the north boundary of the site. The site is currently used as informal parking for employees of the nearby shopping center. There is a potential that special status plants may be present in the drainage channels abutting the site.

Site 5 (1905 Novato Boulevard)is a 1.06 acre site that is developed with a commercial building that is presently occupied by Lifelong Medical Care. This site is almost fully developed, but appears to host a small segment of Vineyard Creek. Vineyard Creek has the possibility of hosting special status plants.Special-Status Wildlife Species

The search of the California Natural Diversity Data Base revealed documented occurrences of 15 special status animal species within a one-mile radius of Novato including: four invertebrates, one fish, seven birds, and threes mammals. Table 3.3-1 provides a list of the special-status animal species that are documented, their habitat, and current protective status. Figure 3.3-3 illustrates the location of each documented occurrence. Special-status wildlife species receive protection from various federal and state laws and regulations, including FESA and CESA. These regulations generally prohibit the taking of a species or direct impact to foraging and breeding habitat without a special permit.

ENDANGERED/THREATENED SPECIES

Of the special status species documented within one mile of Novato, four are listed as endangered and/or threatened. These include: tidewater goby (*Eucyclogobius newberryi*), California black rail (*Laterallus jamaicensis coturniculus*), California clapper rail (*Rallus longirostris obsoletus*), and Salt-marsh harvest mouse (*Reithrodontomy raviventris*). Each of these species is discussed below.

The **tidewater goby** is a federal endangered species that inhabits brackish water habitats along the California coast from Aqua Hedionda Lagoon, San Diego County to the Mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels. This species is documented in Novato Creek near the shoreline area of San Pablo Bay. Site 1 provides a low potential for this species along Novato Creek.

The **California black rail** is a state endangered bird that inhabits tidal salt marshes associated with heavy growth of pickleweed. They also occur in brackish marshes or freshwater marshes at low elevations. This species is documented along the shoreline area of San Pablo Bay. None of the five sites provide habitat for this species.

The **California clapper rail** is a federal and state endangered bird that inhabits salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. This species is associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. This species is documented along the shoreline area of San Pablo Bay. None of the five sites provide habitat for this species.

The **salt-marsh harvest mouse** is a federal and state endangered animal that is only found in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is the primary habitat for this species and they require higher areas for flood escape. They build loosely organized nests and do not burrow. This species is documented along the shoreline area of San Pablo Bay. None of the five sites provide habitat for this species.

FEDERAL SPECIES OF CONCERN/CALIFORNIA SPECIES OF SPECIAL CONCERN

Of the special status species documented within one mile of Novato, eight are federal species of concern and/or California Species of Special Concern. These include: Burrowing owl (*Athene cuniculari*), great blue heron (*Ardea Herodia*), Pallid bat (*Antrozous pallidus*), Sacramento splittail (*Pogonichthys macrolepidotus*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), San Pablo song sparrow (*Melospiza melodia samuelis*), Townsend's big-eared bat (*Corynorhinus townsendii*), and white-tailed kite (*Elanus leucurus*). Each of these species is discussed below.

The **burrowing owl** inhabits open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. They are a subterranean nester that is dependent upon burrowing mammals, most notably, the California ground squirrel. This species is documented in a variety of areas outside the city limits. This species has the potential to be present at times within Novato in the undeveloped grassland areas where ground squirrels are present. Sites 1, 3, and 4 provide potential habitat for this species.

The **great blue heron** is a colonial nester found in tall trees, cliffsides, and sequestered spots on marshes. Their rookery sites are in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. This species has the potential to be present at times within Novato. Site 1 provides potential habitat for this species along the Novato Creek. The Rush Creek Open Space Preserve, located just east of Site 3 (across US 101) includes high quality marsh habitat for this species.

The **San Pablo song sparrow** is a resident of salt marshes along the north side of San Francisco and San Pablo Bays. This species inhabits tidal sloughs in the salcornia marshes and nests in grindelia bordering slough channels. This species is documented along the shoreline area of San Pablo Bay and in a variety of other areas within the city limits. This species has the potential to be present at times within Novato. Site 1 provides potential habitat for this species along the Novato Creek.

The **pallid bat** inhabits deserts, grasslands, shrublands, woodlands and forests and is most common in open, dry habitats with rocky areas for roosting. Their roosts must protect the bats from high temperatures. They are very sensitive to disturbance of roosting sites. This species is documented to the north and west of the city limits. This species has the potential to be present at times within Novato. Sites 1, 3, and 4 provide potential habitat for this species.

The **Sacramento splittail** is endemic to the lakes and rivers of the Central Valley, but is now confined to the Delta, Suisun Bay, and associated marshes. They are found in slow moving river sections and dead end sloughs, and they require flooded vegetation for spawning and foraging for young. This species is documented in the Petaluma River near the San Pablo Bay. Site 1 provides a low potential for this species along the Novato Creek

The **saltwater common yellowthroat** is a resident of the San Francisco Bay region that inhabits fresh and salt water marshes. They require thick, continuous cover down to water surface for foraging. Tall grasses, tule patches, and willows are used for nesting. This species is documented along the shoreline area of San Pablo Bay. None of the five sites provide habitat for this species.

The **Townsend's big-eared bat** is found throughout California in a wide variety of habitats, but is most common in mesic sites. Roosting sites are limited and they are extremely sensitive to human disturbance. They roost in open hangins from walls and ceilings. This species has the potential to be present at times within Novato. Sites 1, 3, and 4 provide potential habitat for this species.

The **white-tailed kite** inhabits rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. They are commonly found foraging in open grasslands, meadows, or marshes close to isolated dense-topped trees for nesting and perching. This species has the potential to be present at times within Novato. Sites 1, 3, and 4 provide potential habitat for this species.

OTHER SPECIES

The following are documented in the CNDDB, but do not have a formal special status listing:

The **Opler's longhorn moth** (Adela oplerella) is found from Marin County and the Oakland area on the inner Coast Ranges south to Santa Clara County. There is one record from Santa Cruz County. All but the Santa Cruz site is on serpentine grassland. Larvae feed on Playtstemon californicus. None of the five sites provide habitat for this species.

The **Marin blind harvestman** (*Calicina diminua*) is a serpentine endemic that is known only from the type locality, Mount Burdell, Novato, Marin County. Site 3 is located at the based on Mount Burdell. A complete survey of this site would be required to determine the presence of this species. None of the other four sites provide habitat for this species.

The **Ubick's gnaphosid spider** (*Talanites ubicki*) is a serpentine endemic that is known only from the type locality, Mount Burdell, Novato, Marin County. Site 3 is located at the based on Mount Burdell. A complete survey of this site would be required to determine the presence of this species. None of the other four sites provide habitat for this species.

The **California brackishwater snail** (*Tryonia imitator*) inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. This species is found only in permanently submerged areas in a variety of sediment types. They are able to withstand a wide range of salinities. None of the five sites provide habitat for this species.

SPECIES NOT DOCUMENTED WITHIN 1-MILE BUT KNOWN IN THE REGION

There are numerous special status plants and animals that are not documented within a one-mile radius of Novato, but are documented within the region. This includes 89 special status plants (21 federal/state listed), all of which have the potential to be present in Novato. There are also 60 animals (14 federal/state listed), of which the following listed species have the potential to be present in Novato: California red-legged frog (*Rana aurora draytonii*) (FT/CSC), steelhead (*Oncorhynchus mykiss irideus*) (FT), Coho salmon (*Oncorhynchus kisutch*) FE/CE), western snowy plover (*Charadrius alexandrinus nivosus*) (FT/CSC). Steelhead is not documented in the CNDDB within Novato; however, this species is known to occur in Novato Creek.

RAPTORS AND MIGRATORY BIRDS

While not documented in the CNDDB within the vicinity of the project site, there are a variety of raptors (eagles, hawks, owls) which are known to occur within the region. The nests of all raptor species are protected under the Section 3503.5 of the Fish and Game Code.

Migratory birds forage and nest in multiple habitats such as annual grasslands, wetlands, riparian, and oak woodlands. The nests of all migratory birds are protected under the MBTA, which makes it illegal to destroy any active migratory bird nest.

Trees on and adjacent to the five sites could provide nesting habitat for a variety of birds protected under the Fish and Game Code and/or MBTA. Additionally, the woodland and grassland habitat on Sites 1, 3, and 4 is appropriate foraging habitat for a variety of birds protected under the Fish and Game Code and/or MBTA.

Development of Site 1, 3, and 4 will directly impact foraging habitat for raptors and migratory birds. It is not known if development at these sites would require the removal of trees. There are a variety of raptors and/or birds protected by the MBTA that could utilize habitat on or adjacent to these sites for nesting or foraging. Construction activities that occur during the nesting season (generally March 1-August 31) would disturb nesting sites for birds protected by the MBTA and Fish and Game Code.

Conclusion

As discussed above, AHO Site 1, 3, 4, and 5 have natural features, including waterways and wetlands, which may support special status species. Site 2 is barren and does not have the potential to support special status species. Future development of a multi-family residential project on Sites 1, 3, 4, and 5 require further biological assessment prior to any development.

Additionally, there is a possibility that development on these sites could require regulatory permitting based on the outcome of the biological assessments. Development plans for sites 1, 3, 4, and 5 are not yet prepared; therefore, the extent of the potential impact is uncertain. If biological assessments determine that special status species are not present, the development plans would be determined to have a less than significant impact at that point in time. If the biological assessments determine that species status species are present, it may be possible to avoid or minimize the impact through appropriate design measures applied via the permit procedures, documentation, design standards and criteria of Zoning Code Divisions 19.35 and 19.36, discussed below. Because the detailed field surveys and development plans are not yet prepared and there is a possibility that future development on Sites 1, 3, 4, and 5 would have a **potentially significant** impact to special status species.

MITIGATION MEASURES

Mitigation Measure 3.3-1: *As part of the City of Novato's design review and entitlement process for any development on Sites 1, 3, 4, and 5, the project applicant for the particular site shall retain a qualified biologist to perform plant and wildlife field surveys of the site and prepare a site specific biological resource assessment. The field survey(s) shall coincide with the appropriate season (i.e. plants surveys during blooming period) for special status species that are known to occur in the region, and shall be performed in accordance with the specific methodologies outlined by the regulatory agencies. If it is determined that a site(s) contain special status species, the applicant shall seek to avoid the special status plants through the design and site planning. If avoidance of the species cannot be accommodated based on other considerations, then the applicant shall coordinate with the listing regulatory agency or organization to determine the appropriate permits, minimization measures, and compensatory mitigation if necessary. At a minimum, the applicant shall minimize the impact by contracting with qualified botanist with previous experience with the particular species that was discovered to hand excavate and relocate the individuals plants and seed bank to a pre-determined replanting site. The replanting site shall contain similar suitable habitat conditions and shall be protected from livestock or other undesirable wildlife, as well as from human entry. A report summarizing the findings of excavation, and replanting efforts shall be prepared and submitted to the City of Novato and the listing regulatory agency or organization. The replanting area shall be monitored for three years to determine the success of replanting efforts. Success is determined by the number of relocated plants that survive. If the success rate after three years is below 75%, consultation with the listing regulatory agency or organization will be required to develop appropriate remediation plans. The applicant shall be responsible for obtaining permits/authorizations prior to any disturbance. If it is determined that the site(s) do not contain special status species, then no additional action is necessary.*

Mitigation Measure 3.3-2: *As part of the City of Novato's design review and entitlement process, any development on the Sites 1 through 5 shall be conditioned as follows:*

If project construction activities, including vegetation clearing, are to occur during the nesting season for birds protected under the California Fish and Game Code and Migratory Bird Treaty Act (approximately March 1-August 31) the applicant shall retain a qualified biologist to perform preconstruction surveys for protected birds, including nesting raptors, on the site and in the

immediate vicinity. At least two surveys shall be conducted no more than 15 days prior to the initiation of construction activities, including vegetation clearing. In the event that protected birds, including nesting raptors, are found on the project site, offsite improvement corridors, or the immediate vicinity, the project proponent shall:

- *Locate and map the location of the nest site. Within 2 working days of the surveys prepare a report and submit to the City and CDFW;*
- *A no-disturbance buffer of 250 feet shall be established;*
- *On-going weekly surveys shall be conducted to ensure that the no disturbance buffer is maintained. Construction can resume when a qualified biologist has confirmed that the birds have fledged.*

In the event of destruction of a nest with eggs, or if a juvenile or adult raptor should become stranded from the nest, injured or killed, the qualified biologist shall immediately notify the CDFW. The qualified biologist shall coordinate with the CDFW to have the injured raptor either transferred to a raptor recovery center or, in the case of mortality, transfer it to the CDFW within 48 hours of notification. If directed/authorized by the CDFW during the notification, the qualified biologist may transfer the injured raptors to a raptor recovery center.

SIGNIFICANCE AFTER MITIGATION

Implementation of the following mitigation measures in conjunction with applicable policies of the General Plan and the permit procedures, documentation, design standards and criteria of Zoning Code Divisions 19.35 and 19.36 would reduce the impact to a **less than significant** level.

Impact 3.3-2: Potential to have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service (Potentially Significant)

Sensitive Natural Communities

In addition to the special-status species identified above, the CBDDB search revealed two sensitive natural community: Coastal Brackish Marsh and Northern Coastal Salt Marsh. Each is described below:

Coastal Brackish Marsh. Brackish marsh vegetation develops in shallow, standing or slow moving waters in coastal bays, estuaries, and coastal lagoons, where fresh water meets salt water in a tidal area. Salinity may vary daily and seasonally depending on the tide and the level of freshwater input. Brackish marsh usually intergrades with salt marsh farther toward the saline water source, and with freshwater marsh at the mouths of rivers.

Brackish marsh generally has species in common with both coastal salt marsh and freshwater marsh and is typically dominated by perennial, emergent, herbaceous plants up to six feet in height. The most common species are cattails (*Typha* spp.) and bulrush (*Scirpus* spp.), especially

alkali bulrush (*Scirpus robustus*). Depending on the salinity, species of sedge (*Carex* spp.), rush (*Juncus* spp.), pickleweed, and others may be present.

Brackish marsh is extensively developed around Suisun Bay in Solano County (including Suisun Marsh and at the mouth of the Sacramento-San Joaquin River delta). Much of the brackish marsh communities around Novato is along the fringe of San Pablo Bay. As with the northern salt marsh communities, the altered hydrological conditions in the diked, non-tidal brackish communities often do not support many of the uncommon plant and animal species found in the more natural tidal marshes. However, such marshes can be highly important to other special-status wildlife species. None of the five sites provide habitat for this plant community.

Northern Coastal Salt Marsh. Coastal salt marsh is restricted to the upper intertidal zone of protected shallow bays, lagoons, and estuaries. Salt marsh is a highly productive plant community consisting of plants that are tolerant of saline soils and regular tidal inundation. Diking and filling of marshlands for agriculture and development have severely diminished the acreage of the San Francisco Bay salt marshes. While only about 10 percent of the historic tidal marshes remain, substantial areas of valuable managed wetlands remain within the historic margins of the bay.

The salt marsh community is composed of relatively low-growing plants, ranging in height from several inches to over three feet. Plant composition changes with small differences in elevation along the edges of these marshes because of small differences in the frequency and duration of tidal inundation. Typically, bare mudflats are bordered by pure stands of the native cordgrass (*Spartina foliosa*) which at the mean high water level become replaced by a dense cover of pickleweed (*Salicornia virginica*). This vegetated marsh zone extending up to mean high water is commonly referred to as the low marsh community. The mid-marsh community typically occurs from about mean high water to mean higher high water. This zone is typically dominated by pickleweed, with some association of alkali heath (*Frankenia salina*), marsh rosemary (*Limonium californicum*), jaumea (*Jaumea carnosa*), sandspurreys (*Spergularia* spp.), and saltgrass (*Distichlis spicata*). Salt grass, marsh gumplant (*Grindelia stricta* var. *angustifolia*), and marsh rosemary dominate the upper marsh zone (above mean higher high water).

Coastal salt marsh communities also occur in non-tidal (diked) marshes. While sharing most of the dominant plant species, the altered hydrological conditions in the diked, non-tidal communities often do not support many of the rare or uncommon plant and animal species found in the more natural tidal marshes. Much of the brackish marsh communities around Novato is along the fringe of San Pablo Bay. None of the five sites provide habitat for this plant community.

Riparian Habitat

The Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to riparian habitat or other sensitive natural communities. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with special status species.

Sites 2, 3, and 4 do not contain any riparian habitat. Site 1 contains riparian habitat in association with Novato Creek, which traverses the southern portion of the site. Program 9.B of the draft Housing Element establishes a provision specifying that future development on Site 1 shall maintain a minimum 20-foot setback from the top of bank of Novato Creek. This program requirement is intended to respect existing flood control and access easements held by the Marin County Flood Control and Water Conservation District that cross Site 1 and to buffer the riparian habitat along Novato Creek from future development. Site 5 abuts riparian habitat along Vineyard Creek..

Conclusion

There are no designated sensitive natural communities located on any of the five AHO sites. Sites 2, 3, and 4 do not contain any riparian habitat. Sites 1 and 5 contain riparian habitat, which could be impacted by future development of a multi-family residential project. This is a **potentially significant** impact.

MITIGATION MEASURES

Mitigation Measure 3.3-3*: As part of the City of Novato's design review and entitlement process for any development on Site 1 and Site 5 due their proximity to Novato Creek and Vineyard Creek, respectively, are subject to the policies of the Novato General Plan addressing water resources and Novato Zoning Code Division 19.35, Waterway and Riparian Protection. Accordingly a future multi-family residential project on Site 1 and/or Site 5 would be required to avoid the placement of structures or disturbance of land within the 50-foot stream protection zone required by Division 19.35. Should a future project contemplate encroachment into the stream protection zone, then the review procedures, documentation, and design standards and criteria of Division 19.35 would be triggered. This would include the need to obtain a use permit to allow development activities in the stream protection zone. With respect to Site 1 specifically, Draft Housing Element Program 9.B establishes a minimum 20-foot setback from the top of bank of Novato Creek. This program requirement is, in part, intended to buffer the riparian habitat along Novato Creek from future development. Accordingly, any future encroachment within the stream protection zone at Site 1 would be limited by Program 9.B.*

Mitigation Measure 3.3-4: *As part of the City of Novato's design review and entitlement process, any development on the Site 1 and 5 shall be conditioned as follows:*

Prior to any ground disturbance, the project applicant shall install orange construction barrier fencing at the limits of the development to identify environmentally sensitive areas around Novato Creek (Site 1) or Vineyard Creek (Site 5) and its associated riparian habitat. Before construction, the contractor shall work with the Design Engineer and qualified biologist to identify the locations for the barrier fencing, and shall place stakes around the sensitive area to indicate these locations. The

fencing shall be installed before construction activities are initiated and shall be maintained throughout the construction period. The following paragraph shall be included in the construction specifications:

- *The Contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the Contractor for any purpose will be allowed unless specifically authorized in writing by the City of Novato. The Contractor shall take measures to ensure that Contractor's forces do not enter or disturb these areas, including giving written notice to employees and subcontractors.*

Temporary fences around the environmentally sensitive areas shall be installed as the first order of work. Temporary fences shall be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the Design Engineer. The fencing shall be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing shall be tightly strung on posts with a maximum 10-foot spacing.

SIGNIFICANCE AFTER MITIGATION

Site 1 and Site 5 due their proximity to Novato Creek and Vineyard Creek, respectively, are subject to the policies of the Novato General Plan addressing water resources and Novato Zoning Code Division 19.35, Waterway and Riparian Protection. Accordingly a future multi-family residential project on Site 1 and/or Site 5 would be required to avoid the placement of structures or disturbance of land within the 50-foot stream protection zone required by Division 19.35. Should a future project contemplate encroachment into the stream protection zone, then the review procedures, documentation, and design standards and criteria of Division 19.35 would be triggered. This would include the need to obtain a use permit to allow development activities in the stream protection zone. A future project at Site 1 and/or Site 5 that is found to comply with Division 19.35 by either respecting the stream protection zone or adhering to its review procedures, documentation, and design standards and criteria for encroachments therein, would be considered to have a less than significant, impact on Novato Creek and/or Vineyard Creek and their associated riparian habitat.

The application of the Waterway and Riparian Protection Ordinance to a future multi-family development proposal at Sites 1 and 5 would reduce the likelihood of potential impacts to riparian habitat. Implementation of the Mitigation Measures 3.3-3 and 3.3-4 in conjunction with applicable policies of the General Plan and the permit procedures, documentation, design standards and criteria of Zoning Code Divisions 19.35 and 19.36 would reduce the impact to a **less than significant** level.

Impact 3.3-3: Potential to have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Potentially Significant)

Streams, rivers, vernal pools, and marshes are of high concern because they provide unique aquatic habitat (perennial and ephemeral) for many endemic species, including special-status plants, birds, invertebrates, and amphibians. These aquatic habitats oftentimes qualify as protected wetlands or jurisdictional waters and are protected from disturbance through the state and federal CWA.

The Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to federally protected wetlands. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with federally protected wetlands.

Site 1 (1787 Grant Avenue) contains natural/undeveloped land composed of riparian woodland, riverine, and grassland habitat in the southwestern portion of the site. The Novato Creek traverses the site in this area. A formal delineation of jurisdictional waters of the United States (i.e. Novato Creek) within the site has not been performed and verified by the USACE. Any activities that would require removal, filling, or hydrologic interruption of Novato Creek would be subject to the federal Clean Water Act Section 404 and California Fish and Game Code Section 1601 (Streambed Alteration Agreement). Under these regulations a formal delineation would need to be prepared and verified by the USACE prior to any activities that would involve the Novato Creek. There is the potential for an impact given the presence of a wetland, the absence of a development application showing the location/design of the development, and the absence of a delineation of Novato Creek. This is a **potentially significant** impact.

Site 2 (Landing Court) is fully paved, fenced, and used for the storage of recreational vehicles. The site does not host any hydrologic features. Accordingly, a future multi-family development proposal at this site would have no effect on a wetland or waterway. Implementation of the proposed development on this site would have **no impact** relative to federally protected wetlands.

Site 3 (Redwood Boulevard) is a 4-acre area located within a larger parcel of 39.92-acres. This parcel, including Site 3, contains natural/undeveloped land composed of oak woodland and

grassland, which is currently used for cattle grazing, and various drainage and seasonal wetland features. Observations from the public right-of-way, combined with examination of records and aerial photographs, provide evidence that hydrologic features are present adjacent to or just within the boundaries of the 4-acre AHO site. In 1999, a jurisdictional wetland delineation was prepared for the entire 39.92-acre parcel in anticipation of a then proposed office development project thereon. This assessment indicated the existence of jurisdictional wetlands along the north and eastern boundaries of the area now identified as AHO Site 3 in addition to other areas of the remainder of the 39.92-acre parcel. Based on the age of this jurisdictional study, a new assessment is necessary to determine if the wetland areas adjoining Site 3 continue to qualify as jurisdictional wetlands. . Accordingly, field surveys are warranted to make this determination prior to future development of a multi-family residential project on the 4-acre AHO site. There is the potential for an impact given the presence of a potential wetland, the absence of a development application showing the location/design of the development, and the absence of a delineation of the potential wetland features. This is a **potentially significant** impact.

Site 4 (7506 Redwood Boulevard) contains ruderal grassland and abuts a partially culverted drainage ditch along Olive Avenue and partially piped drainage channel located adjacent to the north boundary of this site. These drainage channels discharge to a larger drainage channel on the east side of the nearby SMART rail right-of-way, which eventually leads to Rush Creek. A formal delineation of jurisdictional waters of the United States (i.e. frontage drainage ditch) for the site was performed and verified by the USACE in 2005. According to this delineation, the drainage channel along Olive Avenue qualifies as jurisdictional wetland and the drainage channel at the north boundary was determined to be waters of the U.S.. Based on the date of the previous delineation of jurisdictional waters and recent development near the site, an updated jurisdictional review is warranted prior to future development at Site 4. There is no development plan on file for this site so it cannot be determined with certainty how the frontage drainage ditch would be affected if development were to occur on this site. Any activities that would require removal, filling, or hydrologic interruption of the frontage drainage ditch may be subject to the federal Clean Water Act Section 404 and California Fish and Game Code Section 1601 (Streambed Alteration Agreement). Under these regulations a formal delineation would need to be prepared and verified by the USACE prior to any activities that would involve any jurisdictional waters that may be identified by a more current delineation study. Development of this site would have a **potentially significant** impact.

Site 5 (1905 Novato Boulevard) is fully developed, featuring an existing commercial building that is occupied by Lifelong Medical Care, a senior healthcare facility, and a paved parking lot that abuts Vineyard Creek. A formal delineation of jurisdictional waters of the United States (i.e. Novato Creek) within the site has not been performed and verified by the USACE. Any activities that would require removal, filling, or hydrologic interruption of Vineyard Creek would be subject to the federal Clean Water Act Section 404 and California Fish and Game Code Section 1601 (Streambed Alteration Agreement). Under these regulations a formal delineation would need to be prepared and verified by the USACE prior to any activities that would involve Vineyard Creek. There is the potential for an impact given the presence of a wetland, the absence of a development application

showing the location/design of the development, and the absence of a delineation of Novato Creek. This is a **potentially significant** impact.

MITIGATION MEASURES

Mitigation Measure 3.3-5: *As part of the City of Novato's design review and entitlement process, any development on the Sites 1, 3, 4 or 5 shall be conditioned as follows:*

- *Prior to any activities that would result in removal, fill, or hydrologic interruption of the hydrologic features, a formal wetland delineation shall be performed by a qualified biologist and submitted to the USACE for verification. If the USACE determines that the hydrologic features are jurisdictional and that the project activities would result in a fill, the applicant shall secure an authorization of the fill through the Section 404 permit process.*

- *Prior to any activities that would result in removal, fill, or hydrologic interruption of the hydrologic features on Site 1, 3, 4 or 5, the City shall consult with the CDFG to determine if the activities are subject to Section 1601 of the Fish and Game Code. If the CDFG determines that the project activities are subject to these regulations, the applicant shall secure an authorization of the activities through a Streambed Alteration Agreement.*

SIGNIFICANCE AFTER MITIGATION

As discussed above, AHO sites 1, 3, 4, and 5 may host water features that qualify as jurisdictional wetlands or waters of the U.S. Given this circumstance, a jurisdictional delineation should be prepared for each site prior to development with a multi-family residential project. The delineation process would confirm whether jurisdictional wetlands or waters are present at these specific AHO sites. This confirmation would help inform the design of a future multi-family residential project at these AHO sites, including the placement of structures and other improvements within or in close proximity to the noted hydrologic features.

The jurisdictional delineation process would assist in determining whether or not the provisions of Novato Zoning Code Division 19.36, Wetland Protection and Restoration, would be applicable to a future development on Site 1, 3, 4, and 5. As discussed earlier, the provisions of Division 19.36 are triggered when new development is proposed to occur near jurisdictional wetlands. If applicable, new development on Site 1, 3, 4, and/or 5 would be required to maintain a buffer of 50 feet from a jurisdictional wetland. Should a new development proposal contemplate buildings or disturbances inside of 50-feet or involve the fill of a delineated wetland, then a use permit would be required. Through the use permit process a project would be reviewed for compliance with the development standards and design criteria, of Division 19.35, including identifying an acceptable buffer area under 50-feet, the implementation of protection measures, such as fencing, landscaping with native vegetation, and erosion and sediment control. A project involving any permitted wetland fill would be required to mitigate lost wetland habitat at a minimum ratio of 2:1 for on-site replacement and a minimum ratio of 3:1 for off-site replacement. A future project at Sites 1, 3, 4, and 5 that is found to comply with Division 19.36, by either respecting the 50-foot wetland buffer requirement or adhering to the permit procedures, documentation, and design standards and criteria, and replacement ratios for encroachments/fills in jurisdictional wetlands, would be considered to have a **less than significant,** impact on federally protected wetlands.

Impact 3.3-4: Potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Potentially Significant)

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (i.e. linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). Wildlife habitat corridors maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation or removal. The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question.

Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species everyday survival. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and use corridors for a greater length of time.

Movement corridors for wildlife through Novato's urban core are limited due to the density of urbanization. Wildlife movement through Novato's urban core is primarily limited to the creek systems, including Novato Creek and Vineyard Creek. Outside of the urban core, wildlife movement is not limited due to the openness of the habitat. These areas provide habitat mostly for terrestrial, aquatic, and avian wildlife.

The Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to movement of species, migration corridors, or nursery sites. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with movement of species, migration corridors, or nursery sites.

Site 1 (1787 Grant Avenue) contains natural/undeveloped land composed of riparian woodland, riverine, and grassland habitat in the southwestern portion of the site. The Novato Creek traverses the site in this area. The Novato Creek and associated habitat serves as one of the few corridors for movement of wildlife through Novato. Site 2 (Landing Court) is fully paved, fenced, and used for the storage of recreational vehicles. The site does not host any natural habitat features and has a fence that precludes access by wildlife. A future multi-family development proposal at this site would have **no impact** on wildlife movement.

Site 3 (Redwood Boulevard) contains natural/undeveloped land composed of oak woodland and grassland. This site is located in a more rural and open area of Novato, but it is not identified or mapped as a wildlife corridor or nursery site. Wildlife in the region, however, is currently able to move relatively undisturbed through this site and adjacent areas due to the lack of existing development in the area.

Site 4 (7506 Redwood Boulevard) contains ruderal grasses, and abuts a partially culverted drainage ditch along Olive Avenue and a partially piped drainage channel along its northern boundary. This site has the potential for presence of special status plants and animals within the noted drainage channels. However, the site and its surrounding drainage channels lack vegetative cover and are located in an urbanized setting featuring extensive commercial development and human activity. Given this circumstance, this site does not provide the necessary elements of cover and safety for wildlife movement and nursery use. This site is not considered to provide a wildlife movement corridor or offer nursery habitat.

Site 5 (1905 Novato Boulevard) is fully developed, featuring an existing commercial building that is occupied by Lifelong Medical Care, a senior healthcare facility, and a paved parking lot that abuts Vineyard Creek. Vineyard Creek and its surrounding riparian vegetation potentially provide a corridor for wildlife movement and nursery use.

As discussed above, Sites 2 and 4 do not contain habitat features providing the necessary vegetative cover and safety from human activity required for wildlife movement and nursery use. Based on this observation, the future development of a multi-family residential project on Sites 2 and 4 would have **no impact** on wildlife movement or nursery use.

Site 3 is a 4-acre site located within a larger 39.92- acre parcel. Future development of Site 3 is not anticipated to substantially interfere with the movement of native wildlife or impede the use of a native wildlife nursery since the balance of the 39.92-acre parcel would not be developed under the Draft Housing Element. As such, wildlife would continue to be able to move about the balance of the parcel surrounding Site 3. Likewise, wildlife nursery space would remain available on the larger parcel. Based on these observations, future development at Site 3 would have a **less than significant** impact with respect to substantially interfering with wildlife movement or impede use of the a native wildlife nursery.

Sites 1 and 5 contain potential habitat for movement, migration corridors, or nursery sites associated with Novato Creek and Vineyard Creek. Development on Sites 1 and 5 would have a **potentially significant** impact.

MITIGATION MEASURES

Implement Mitigation Measures 3.3-1, 3.3-3, and 3.3-4.

SIGNIFICANCE AFTER MITIGATION

As discussed under Impact Sections 3.3-1 and 3.3-2, Sites 1 and 5 are subject to Mitigation Measures 3.3-1, 3.3-3, and 3.3-4 as well as the provisions of Zoning Code Division 19.35. Accordingly, a future multi-family residential project on Site 1 or Site 5 would be required to avoid the placement of structures or disturbance of land within the 50-foot stream protection zone required by Division 19.35. However, should a future project contemplate encroachment into the stream protection zone, then the review procedures, documentation, and design standards and criteria of Division 19.35 would be triggered. A future project at Site 1 and 5 that is found to comply with Division 19.35, by either respecting the stream protection zone or adhering to its review procedures, documentation, and design standards and criteria for encroachments therein would be considered to have a **less than significant** impact with respect to substantially interfering wildlife movement or impede the use of a native wildlife nursery area.

Impact 3.3-5: Potential to conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Potentially Significant)

The Environment Chapter of the General Plan establishes policies and programs that are designed to protect and conserve these biological resources. Below is a consistency review of the policies applicable to the proposed project.

General Plan Policies Protecting Biological Resources

EN Policy 1 requires preservation and enhancement of the ecology of creeks and streams. This includes the establishment of a Stream Protection Zone for watercourses shown on EN Map 1 and their significant tributaries (i.e. Novato Creek). The width of the Stream Protection zone includes 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. This policy applies to development at Sites 1 and 5. **EN Policy 2** requires protection of vegetation in watercourse areas. This policy applies to development at Sites 1 and 5. **EN Policy 3** seeks to preserve and enhance wildlife habitat areas in watercourse areas and control human use of these areas as necessary to protect them. This policy applies to development at Sites 1 and 4. **EN Policy 5** requires restoration of damaged portions of riparian areas to their natural state, wherever feasible. Mitigation Measures 3.3-3 and 3.3-4 ensure compliance with these policies.

EN Policy 7 encourages protection of water resources from pollution and sedimentation, and preserves their environmental and recreation values. This policy applies to development at all sites during construction activities and is addressed through the Regional Water Quality Control General Construction Permit requirement which requires the preparation and implementation of a Storm Water Pollution Prevention Plan. In addition to the construction related issues, Mitigation Measure3.3-4 would preserve wetland ecology at Sites 3 and 4 and Mitigation Measure 3.3-5

includes a provision that requires the hydrologic features to be delineated in accordance with the USACE.

EN Policy 9 requires a wetland determination by the USACE. This policy applies to development at Site 1, 3, 4 and 5, which each have hydrologic features and require a formal wetland/waters delineation and USACE determination. Mitigation Measure 3.3-5 includes a provision that requires the hydrologic features to be delineated in accordance with the USACE.

EN Policy 10 seeks to preserve and enhance wetlands ecology. This policy includes programs to establish Wetland Protection Standards for wetlands including provisions to extend the Wetlands Protection area where riparian vegetation exists. This policy also includes programs that require development plans to avoid wetlands to the maximum extent feasible and if development is permitted within wetlands, it requires mitigation at 2:1 replacement to provide wetland habitat of the same type as the lost habitat. This policy applies to development at Sites 3 and 4 which may have jurisdictional wetlands. Mitigation Measure3.3-4 would preserve wetland ecology at Sites 3 and 4.

EN Policy 11, 13, 14, and **17** are not applicable to the Housing Element. These policies are aimed at the Bayland Overlay Zone, the Bayland Area Protection, Tidal Areas, and Interagency Coordination for Bay Protection. The Housing Element does not include any programs that affect these areas and there is no proposed housing in these areas.

EN Policy 18 requires protection of biological resources that are necessary to maintain a diversity of plant and animal species. This policy applies to development at Site 1, 3, 4 and 5, since each include natural habitat. Field surveys have not been performed due to access constraints; therefore the absence/presence of specific biological resources cannot be determined with certainty. Mitigation Measure 3.3-1 ensures compliance with this policy.

EN Policy 19 requires cooperation 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. This policy applies to development at Site 1, 3, 4 and 5, which each include potential habitat for special status species. Field surveys have not been performed due to access constraints, therefore the absence/presence of special status species cannot be determined with certainty. Mitigation Measure 3.3-1 ensures compliance with this policy.

EN Policy 23 requires that the age and species diversity of native woodlands be maintained, and the health of trees and other vegetation be preserved wherever feasible. EN Policy 24 requires the protection of 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. EN Policy 25 encourages and, where appropriate, requires actions by private property owners to protect the health of native woodlands and trees. This policy includes a program to adopt a tree preservation ordinance that incorporates the City's Heritage Tree Ordinance. EN Policy 26 requires 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.

Woodland and Tree Preservation Ordinance (Zoning Code Division 19.39) The Woodland and Tree Preservation Ordinance includes provisions intended to promote, in part, the conservation of native trees, forests and woodlands on private lands, and on both public and private lands during development. This Ordinance applies to all proposed development and new land uses on properties with native tree, forest or woodland resources, as determined by the City's Community Development Director. The standards and criteria of this Ordinance are applied to new development through the City's design review process, which is required of most new residential development in the city. The standards and criteria of this Division include requirements to prepare a tree inventory, create and implement a woodland conservation and management plan, retain a minimum of 75% of existing native trees under development conditions, and the on-site replacement of lost trees at a ratio of 3:1.

Site 1 (1787 Grant Avenue) contains natural/undeveloped land composed of riparian woodland, riverine, and grassland habitat along Novato Creek. A future multi-family residential development proposal could result in the removal of native trees in conflict with Novato Zoning Code Divisions 19.35, Waterway and Riparian Protection. This is a **potentially significant** impact.

Site 2 (Landing Court) is fully paved, fenced, and used for the storage of recreational vehicles. The site does not host any significant native trees. A future multi-family development proposal at this site would result in **no impact** to native trees or woodlands.

Site 3 (Redwood Boulevard) contains natural/undeveloped land composed of oak woodland and grassland. Site 3 is a 4-acre portion of a larger 39.92 acre parcel. Site 3 hosts a single-oak tree. A future multi-family residential project could be designed to avoid the removal of this tree. However, there is the potential a future project could remove this tree. This would be a **potentially significant** impact.

Site 4 (7506 Redwood Boulevard) contains ruderal grasses, a partially culverted drainage ditch along the Olive Avenue, and a partially piped drainage channel along its northern boundary. The site does not contain any trees or woodlands. A future multi-family residential development at this site would result in **no impact** to native trees or woodlands.

Site 5 (1905 Novato Boulevard) is fully developed, featuring an existing commercial building that is occupied by Lifelong Medical Care, a senior healthcare facility, and a paved parking lot that abuts Vineyard Creek. This site hosts native trees along Vineyard Creek. A future multi-family residential development proposal could result in the removal of native trees in conflict with Novato Zoning Code Division 19.35, Waterway and Riparian Protection. This is a **potentially significant** impact.

MITIGATION MEASURES

Implement Mitigation Measures 3.3-1, 3.3-2, 3.3-3, 3.3-4, and 3.3-5.

Mitigation Measure 3.3-6: *The City of Novato shall require, during the design review and entitlement process, any development proposal to include an arborist report that documents and maps the location and health of trees located on the site. The applicant shall seek to avoid trees on the site to the extent feasible. Trees that must be removed to enable the development shall be conditioned to replace the trees consistent with the Woodland and Tree Preservation Ordinance.* The minimum replacement shall be a 3:1 ratio for native trees, replaced on-site.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure 3.3-6 requires the preparation of an arborist report to document and map the location and health of trees located on a development site. When trees are documented on the site, the applicant must seek to avoid trees to the extent feasible. Trees that must be removed must be replaced at a 3:1 ratio. This mitigation measure is in accordance with the requirements of the Woodland and Tree Preservation Ordinance and would reduce the potential impact to a **less than significant** level.

Impact 3.3-6: Potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan (no impact)

There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan that applies to Novato at this time. Therefore, there is no conflict and no impact would occur.

REFERENCES

The primary sources of data referenced for this section is derived from the following:

Barbour and Major. 1988. Terrestrial vegetation of California.

California Department of Conservation. 2002. California Geological Survey, Note 36.

California Dept. of Fish and Game. 2012. "Special Animals List." Natural Diversity Database.

California Dept. of Fish and Game. 2012. "Special Plants List." Natural Diversity Database.

California Dept. of Fish and Game. 2012. "Special Vascular Plants, Bryophytes, and Lichens List." Natural Diversity Database.

California Dept. of Water Resources. 2009. California Water Plan Update 2009, North Coast Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

California Dept. of Water Resources. 2009. California Water Plan Update 2009, San Francisco Bay Integrated Water Management, Volume 3, Regional Reports, Bulletin 160-09.

California Dept. of Water Resources. 2010. Final 2010 Integrated Report (CWA Section 303(d) List / 305(b) Report).

CalWater, California Interagency Watershed Mapping Committee. 2008. California Watershed Boundary Dataset (WBD).

Hickman, James C. 1993. Jepson Manual: Higher Plants of California.

Holland, R.F., 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Nongame Heritage Program, Dept. Fish & Game, Sacramento, Calif. 156 pp.

Sawyer, John and Todd Keeler-Wolf. 1995. A Manual of California Vegetation.

Seaber, P.R., Kapinos, F.P., and Knapp, G.L., 1987, Hydrologic Unit Maps: U.S. Geological Survey Water-Supply Paper 2294, 63 p.

Skinner, Mark W. and Bruce M. Pavlik, Eds. 2001. California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California.

State of California, California Biodiversity Council. 2008. Interagency Natural Areas Coordinating Committee (INACC)-Working Bioregions. Website accessed May 9, 2011. http://ceres.ca.gov/geo_area/bioregions/Bay_Delta/about.html.

United States Army Corps of Engineers. 1987. Wetland Delineation Manual.

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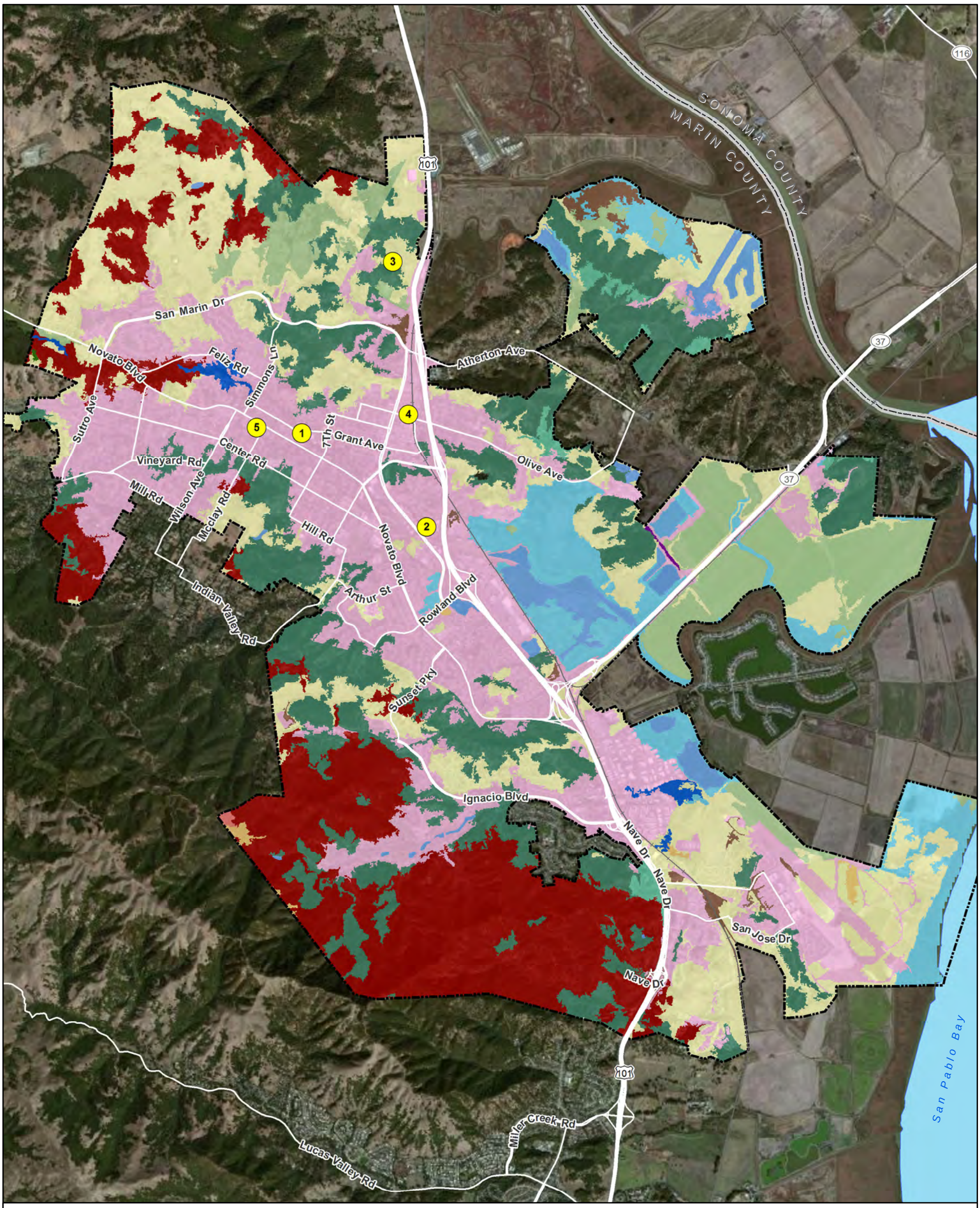

- Eucalyptus
- Annual Grassland
- Barren
- Blue Oak Woodland
- Coastal Oak Woodland
- Coastal Scrub
- Cropland
- Douglas Fir
- Lacustrine
- Mixed Chaparral
- Montane Hardwood
- Montane Riparian
- Saline Emergent Wetland
- Urban

Study Sites 1 through 5

Data sources: USDA Forest Service - Pacific Southwest Region - Remote Sensing Lab; ESRI StreetMap North America; BING Aerial Image. Map date: May 28, 2013.

CITY OF NOVATO HOUSING ELEMENT

Figure 3.3-1: Land Cover Types

N

0 0.5 1

Miles

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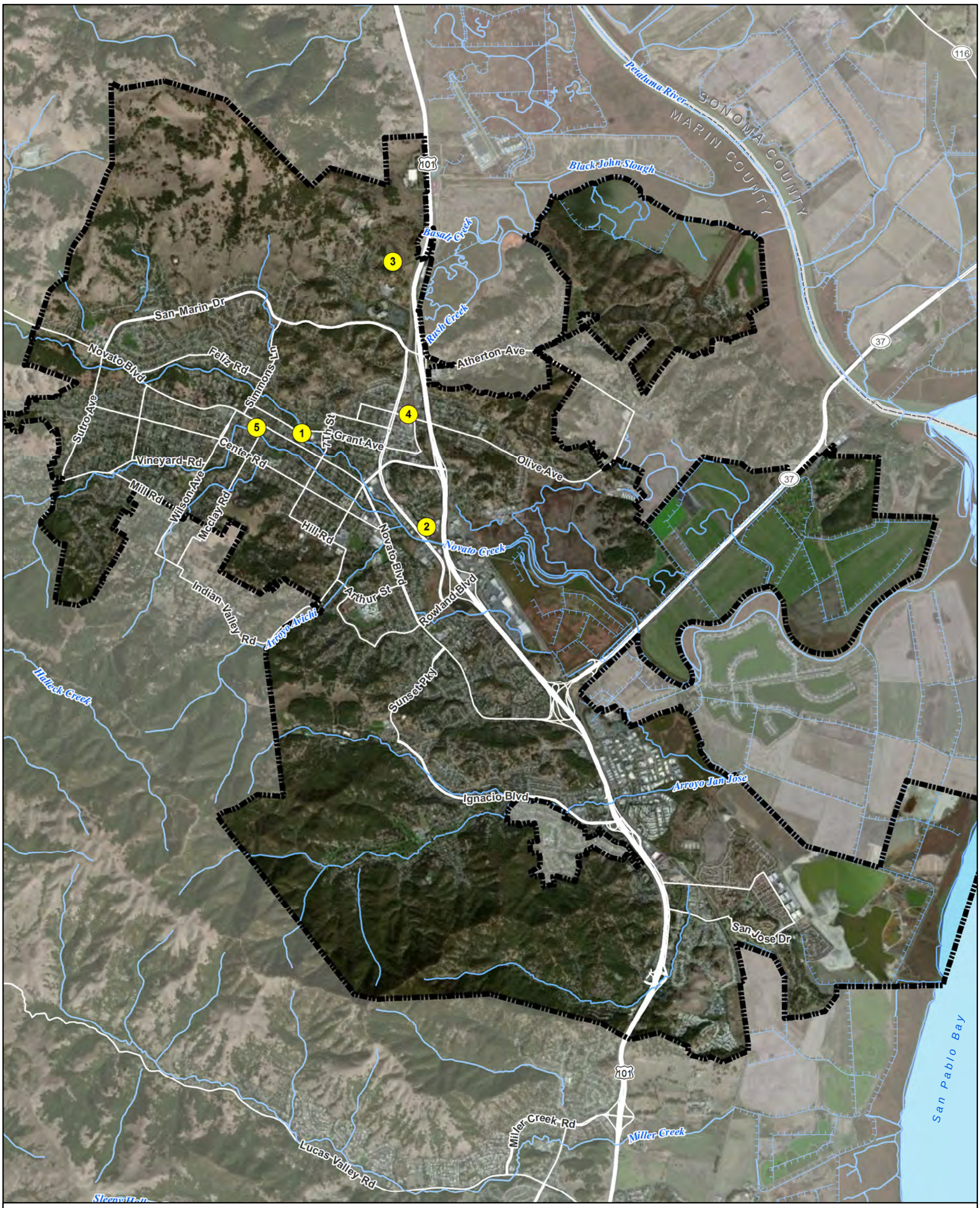

CITY OF NOVATO HOUSING ELEMENT

Figure 3.3-2: Hydrography Map

Stream or River

Canal or Ditch

Coastline

City of Novato

Study Sites 1 through 5

N

0 0.5 1

Miles

Data sources: USGS National Hydrography Data Set;
ESRI StreetMap North America; BING Aerial Image. Map date: May 28, 2013.

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Novato City Boundary

1-mile radius

Map Label - Common Name - Occurrence Count

- 1 - Baker's navarretia - 1
- 2 - burrowing owl - 4
- 3 - California black rail - 7
- 4 - California clapper rail - 5
- 5 - Coastal Brackish Marsh - 1
- 6 - fragrant fritillary - 1
- 7 - great blue heron - 1
- 8 - Marin blind harvestman - 1
- 9 - Marin knotweed - 1
- 10 - Marin western flax - 2
- 11 - California brackishwater snail - 1
- 12 - Mount Tamalpais bristly jewel-flower - 1
- 13 - Mt. Tamalpais manzanita - 1
- 14 - Napa false indigo - 1
- 15 - Northern Coastal Salt Marsh - 4
- 16 - Opler's longhorn moth - 1
- 17 - pallid bat - 2
- 18 - Sacramento splittail - 1
- 19 - salt-marsh harvest mouse - 2
- 20 - saltmarsh common yellowthroat - 4
- 21 - San Pablo song sparrow - 8
- 22 - soft bird's-beak - 1
- 23 - tidewater goby - 1
- 24 - Townsend's big-eared bat - 1
- 25 - Ubick's gnaphosid spider - 1
- 26 - white-tailed kite - 1
- 27 - white seaside tarplant - 2

Study Sites 1 through 5

Water Bodies

Data sources: CDFW CNDDB, April 2, 2013. ESRI StreetMap North America. Map date: May 28, 2013.

CITY OF NOVATO HOUSING ELEMENT

Figure 3.3-3: CNDDB Map - 1-mile Radius

N

0 0.5 1

Miles

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This section provides a discussion of the prehistoric period background, ethnographic background, historic period background, known cultural resources in the region, the regulatory setting, an impact analysis, and mitigation measures. There were no comments received during the public review period for the NOP related to cultural resources. Information in this section is derived primarily from the *Cultural Resources Assessment of the Novato Affordable Housing Project* (Peak & Associates, Inc. 2013), *City of Novato General Plan* (City of Novato, as revised 2007), and *Existing Conditions Report* (City of Novato 2009).

3.4.1 ENVIRONMENTAL SETTING

CULTURAL AND HISTORICAL SETTING

The following cultural and historical setting of the region is taken from the *Cultural Resources Assessment of the Novato Affordable Housing Project* (Peak & Associates, Inc. 2013, pp. 2-5) and the *Existing Conditions Report* (City of Novato 2009).

Archeological Background

Evidence of settlement of coastal Marin County is virtually absent prior to about 5,000 years before the present (B.P.) and then is only reported at one site. While the area was likely occupied in earlier times, the evidence is absent. By the latter half of the Middle Archaic, however, there is enough evidence to define the Pacheco Aspect of the Lower Berkeley Pattern for the area.

The Berkeley Pattern was defined as a set of cultural norms that, in general, were found together over a wide area and lasted for a long time. For the Berkeley Pattern, the most consistent associations include:

- a burial mode that was predominately flexed, with variable cardinal orientation and some cremations present;
- a lower percentage of burials with grave goods than in earlier periods and ochre staining is common in graves;
- *Olivella* beads of type C1, F and G predominate, and there is abundant use of green *Haliotis sp.* rather than red *Haliotis sp*; and
- perforated canid teeth are often present as are asymmetrical and fishtail charmstones, usually perforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Berkeley began in the Bay Area and then expanded to surrounding areas as far as the Central Valley and the Clear Lake vicinity. In most cases, this seems to reflect certain societal aspects, like religion (burial patterns) and decoration (bead types), rather than population movement.

The later Berkeley Pattern sites on the Marin Bayshore have been referred to as the Ellis Landing/McClure Complex. These sites appear to reflect a continuing evolution of the Berkeley Pattern rather than a result of population change or some other major upheaval in the society.

The most recent prehistoric pattern (post about 1,000 B.P.) is Emmeryville, a bayshore aspect of the widespread Augustine Pattern. This reflects a sophisticated strategy for exploiting bayshore resources and wide ranging trade relationships. A late phase of this pattern was defined by excavation at a site in Novato (CA-MRN-7).

Ethnological Background

The project area lies in the territory controlled by the Coast Miwok at the time of Euro-American contact. The voyages of Drake in 1579 and Cermeño in 1595 resulted in sketchy accounts of the life of the Coast Miwok prior to disruption of the native culture. This is fortunate because the traditional way of life disappeared rapidly after the founding of the mission at San Francisco in 1776 and the later missions at San Rafael and Sonoma. Movement of Coast Miwok to the missions combined with the determination of the friars to convert the natives to Christianity and the spread of epidemic diseases, led to the eventual disintegration of much of the Coast Miwok culture. The Russian colony at Fort Ross used Bodega Bay in Coast Miwok territory as a port, but the Russian policy was to interfere with Indian life only to the extent necessary to harvest the maximum number of sea otter pelts.

The Coast Miwok occupied what is now Marin County and part of Sonoma County, as far north as the vicinity of Sebastopol. There is extensive coastline in this territory and resources from the sea and salt marshes were important in Coast Miwok subsistence, however, the resources available in the interior of their territory were by no means ignored. Sea mammals were not part of the diet but various species of fish were taken with nets, seines, weirs, spears and line-with-gorge technologies, as appropriate. Even more important in the diet were clams and some species of mussel, resulting in the characteristic coastal shell middens familiar through archeology.

The most important food resource, as with most California Indians, was the acorn. It was leached to remove most of the tannic acid and then ground into meal and prepared in various ways. It was particularly valuable because the meal could be stored against times of shortage of other foods. Kelp was collected, dried and stored as another hedge against seasonal shortages. The interior of the territory also provided many mammals and rodents that were hunted or trapped. Birds, both interior and coastal, were netted and a wide variety of vegetable foods were collected. Despite the relative abundance of their food sources, winter and early spring were still times of short food supply, and stored acorns and kelp were then the primary foods during these seasons.

Villages were situated with respect to food resources at various times of year. The Coast Miwok moved among residences on the coast, around salt or freshwater marshes and on interior streams so that they would be close to the most abundant food supply available in a particular season. Dwellings were conical brush-on-frame structures capable of sheltering up to ten individuals. Other structures included semi-subterranean sweathouses that served as something of a men's club, and, at major villages, a dancehouse for religious ceremonies. The dancehouse was basically the same construction as the sweathouse only larger. An excavation about two feet deep and fifteen in diameter formed the floor and a timber framework supported a brush dome capped with earth.

Archeology has provided an extensive collection of the stone tools that were used, but it is clear from ethnology that basketry and cordage were used for the majority of utilitarian objects. These

materials do not preserve well, so they are uncommon in archeological sites. Basket making was a highly developed skill and baskets were woven tightly enough to hold water and cooking of acorn mush was accomplished by dropping hot rocks into baskets containing the mush. Cordage was used for the variety of nets used in taking fish, birds, and small mammals. In terms of socio-political organization, the term Coast Miwok is primarily a convenience for anthropologists, denoting a group speaking the same language and occupying a contiguous territory. In fact, there was no overall political control of this group and the real basis of social organization was the main village. Major villages were occupied by a group of related families under the authority of a headman. Even at this level the powers of the headman were limited and, basically, advisory. No overall authority for Coast Miwok was recognized, and village groups were sometimes on better terms with their Pomo or Patwin neighbors than with other Coast Miwok village groups. Within the village group, close ties were maintained through the extensive religious/ceremonial life and through kinship ties.

Through much of aboriginal California, shell beads served as a form of currency. As a coastal people, the Coast Miwok had access to the raw material and bead manufacture was an important industry because it provided currency to trade for goods from neighboring groups. This allowed the Coast Miwok to import obsidian from the Wappo to the north to use in making arrowheads and other edged tools. Chert was used to form more utilitarian edged implements, but obsidian was the preferred material. Yellow ocher was also obtained from the Wappo for paint and venison and magnesite cylinders were obtained from the Pomo. Despite their access to clam shell, the trade relationships of the Coast Miwok do not appear to have been very extensive. Perhaps this reflects the relative abundance of resources available in their own territory.

Historical Background

Novato was originally the site of several Coast Miwok villages: Chokeche, near downtown Novato, Puyuku, near Ignacio, and Olompali, at the present Olompali State Historic Park.

Several land grants were made by Mexican governors in this region, and were confirmed in U.S. courts after California was annexed to the United States. The project area lies on one of these, Rancho de Novato. Rancho de Novato extends south from Black Point along San Pablo Bay. The rancho was given to Fernando de la Trinidad Feliz in 1839 by Governor Alvarado.

Feliz constructed an adobe building on the place. The grant passed from Feliz to Jacob P. Leese, and he disposed of it to Bezar Simmons, who erected a large wooden house on it in 1850, just south of the old adobe. Simmons made an assignment for the benefit of his creditors, and A. C. Peachy, one of the assignees, purchased the Novato rancho and sold it to Johnson & McKabe, and they disposed of it to Sweetser & De Long.

Another source identifies the use of the name of Cañada de Novato in 1828 for the place where the cattle from Mission San Rafael grazed. A chief of the local tribe had been baptized for Saint Novatus. The source also gives a date for the use as a name of rancho in 1836 instead of 1839. In 1856, it became the name of the post office for the town that grew up on the lands of the rancho.

Novato in 1880 consisted of a few houses bordering the roadside, of which one was used as a store, two as saloons, one as a blacksmith shop, and one as a meat market. There was a

warehouse on the bank of a slough nearby, and the schooner "Solferina" made regular runs from that wharf to San Francisco.

From this rather sleepy start, Novato's population increased with the coming of the automobile and easy transportation from the town to San Francisco.

By 1911, an electrical substation was built, which was followed by telegraph, telephone, and water lines. In the 1920s, the Novato Sanitary District was formed. Novato incorporated in 1960, and residential development in the 1960s and 1970s spread outward along Novato Boulevard.

Hamilton Air Field was constructed in 1932, an expanded into a full-fledged base (Hamilton Air Force Base) bringing jobs and population growth to Novato. Services at the base were continued until 1974, when most of the base was closed as encroaching housing development around the base increased the danger of a plane crash or other accident. While this put an end to the base's air related activities, the base continued to act as a training facility and a transfer station until it was closed in the 1990s and subsequently reused for a variety of public and private uses.

The area's history is recognized in the local museum and in historical buildings. The Marin Museum of the American Indian has museum exhibits and also sponsors a variety of community lectures and events, including the late summer Trade Feast showcasing native art, music and dance. Olompali State Park is around the site of the Feliz adobe and other early houses. Alley, Bowen & Company (1880) provide an account of the Native American artifacts that were removed from this site when the houses were being built. Historical buildings dot downtown Novato, including the Novato History Museum (1850), City Hall (a former Presbyterian church built in 1896) and Druid's Hall (1899). Novato's Old Town hosts traditional stores, boutiques and restaurants.

PROJECT SETTING AND RESOURCES

The *Existing Conditions Report* (City of Novato 2009) stated that examination of the Northwest Information Center (NWIC) of the California Historical Resources Information System base maps showed that approximately 35 percent of land within the City of Novato's Sphere of Influence (SOI) has been surveyed. These surveys have found and recorded a total of 105 potential cultural resources, including 17 potential historic and 79 potential prehistoric sites. The Historic Property Directory lists 52 properties in the SOI. Based on the percent of land surveyed and the number of resources found, the *Existing Conditions Report* concluded there is potential for additional sites within Novato's SOI that have not yet been discovered. An NWIC record search was conducted for the proposed project to identify known cultural and historic resources on the sites potentially affected by the proposed project, as described in Chapter 2.0.

Information Center Record Search

A review of records maintained by the NWIC was conducted by center staff in June and July, 2013. The record search was restricted to the Affordable Housing Opportunity (AHO) sites, alternative sites, the Hamilton and Ignacio Industrial Park sites, and the immediate vicinity surrounding these sites. There is one identified cultural resource, CA-MRN-678, on one of AHO sites. No cultural resources have been identified in the alternate sites or in the Hamilton and Ignacio Industrial Park areas. Previous surveys have covered all but one of the AHO sites (Site 2 – Landing Court), two of the alternate sites have been surveyed, and most of the industrial park area has been surveyed.

The NWIC record search included examination of the latest listings of the National Register of Historic Places, the California Register of Historical Resources, the California Inventory of Historic Resources, California Historical Landmarks, California Points of Historical Interest, and Historic Property Directory (Office of Historic Preservation data base).

Historic maps were also consulted and none of the historic maps depict any structures within the project areas. Two modern buildings are located on the AHO sites. No structures are in the alternative sites and numerous modern industrial structures are within the Hamilton-Ignacio Industrial Parks. None of these would be considered significant historic properties.

CA-MRN-678 (P-21-002625) has been the subject of some controversy regarding location and designation. As early as 1955, a site was recorded which eventually received the designation CA-MRN-352. In 1978, another site using the same number was recorded nearby but at a separate location to the east. It is possible for contemporaneous loci in the same vicinity to be considered portions of the same site, but later testing at both locations concluded that there was a small, but definite, space where there was no site separating the two sites. In addition, the eastern-most site was deeper and had an earlier component, although most of the occupation of both locations was contemporaneous. Eventually the locations were given separate numbers, but confusingly, the new number (CA-MRN-678) was assigned to the initial site and the old number applied to the western site.

CA-MRN-678 was excavated by Holman Associates in 2006. Three units were dug within the midden area and several auger borings were completed to define the boundaries of the site. The intact midden extended up to 110 cm below the surface and contained primarily artifacts characteristic of the Emergent Period. However, at the base of the deposit, artifacts were recovered characteristic of the previous cultural period. The western site (CA-MRN-352) did not contain the earlier cultural evidence. CA-MRN-678 was capped with flood sediment above the midden, but the augering program determined accurate boundaries.

Native American Resources

A letter was written to the Native American Heritage Commission requesting a check of their sacred lands file to determine if any sites of religious/ceremonial importance to modern Native Americans had been recorded near the project area. There were no entries in the file for properties in the immediate vicinity.

A list of names of Native American individuals/organizations who might have concerns regarding development in this area was obtained through the Native American Heritage Commission. Correspondence with an accompanying map was sent requesting information concerning cultural properties located on, or near, the project areas. Gene Buvelot, Frank Sarris, and Frank Ross, of the Federated Indians of the Graton Rancheria, and the Ya-Ka-Ama organization were contacted.

A letter was received from the Sacred Sites Protection Committee of the Federated Indians of Graton Rancheria, indicating that “All of the proposed sites are in close proximity to cultural resources and known burial sites.” The letter requested that the Federated Indians of the Graton Rancheria be included in consultation in the planning phase to develop plans for avoiding impact to Native American cultural resources.

Paleontological Resources

The *Existing Conditions Report* (City of Novato 2009, p. 8-7) reports that there are no records of invertebrate, vertebrate, microfossil, and paleobotanical fossils located within Novato. The nearest identified fossils were found in the Petaluma Formation, which is outside the Novato General Plan area. However, the *Existing Conditions Report* noted that the tuffaceous sandstone unit beneath the volcanic rocks of Mt. Burdell contains fossils and that this unit may occur within the northernmost portion of the Novato General Plan area.

3.4.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act

The National Historic Preservation Act was enacted in 1966 as a means to protect cultural resources that are eligible to be listed on the National Register of Historic Places (NRHP). The law sets forth criterion that is used to evaluate the eligibility of cultural resources. The NRHP is composed of districts, sites, buildings, structures, objects, architecture, archaeology, engineering, and culture that are significant to American history.

Virtually any physical evidence of past human activity can be considered a cultural resource. Although not all such resources are considered to be significant and eligible for listing, they often provide the only means of reconstructing the human history of a given site or region, particularly where there is no written history of that area or that period. Consequently, their significance is judged largely in terms of their historical or archaeological interpretive values. Along with research values, cultural resources can be significant, in part, for their aesthetic, educational, cultural and religious values.

STATE

California Register of Historic Resources

The California Register of Historical Resources (CRHR) was established in 1992 and codified in the Public Resource Code (PRC) Sections 5020, 5024, and 21085. The law creates several categories of properties that may be eligible for the CRHR. Certain properties are included in the program automatically, including: properties listed in the NRHP; properties eligible for listing in the NRHP; and certain classes of State Historical Landmarks. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR Section 15064.5(b) and PRC Sections 21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

Cultural resources, under CRHR and NRHP guidelines, are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. A cultural resource may be eligible for listing on the CRHR and/or NRHP if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

If a prehistoric or historic period cultural resource does not meet any of the four CRHR criteria, but does meet the definition of a "unique" site as outlined in PRC Section 21083.2, it may still be treated as a significant resource if it is: an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,
- it has a special and particular quality such as being the oldest of its type or the best available example of its type, or
- it is directly associated with a scientifically recognized important prehistoric or historic event.

Historic Property Directory

The Historic Property Directory (HPD) is a list compiled by the California Office of Historic Preservation that contains information regarding a property with respect to the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places.

California Environmental Quality Act

CEQA Guidelines §15064.5 provides guidance for determining the significance of impacts to archaeological and historical resources. Demolition or material alteration of a historical resource, including archaeological sites, is generally considered a significant impact. Determining the CRHR eligibility of historic and prehistoric properties is guided by CCR §§15064.5(b) and Public Resources Code (PRC) §§21083.2 and 21084.1. NRHP eligibility is based on similar criteria outlined in Section 106 of the NHPA (16 U.S. Code [USC] 470).

CEQA also provides for the protection of Native American human remains (CCR §15064.5[d]). Native American human remains are also protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.), which requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items within their collections, notify Native American groups of their holdings, and provide an opportunity for repatriation of these materials. This act also requires plans for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony that might be uncovered as a result of development projects overseen or funded by the federal government.

Assembly Bill 978

In 2001, Assembly Bill (AB) 978 expanded the reach of Native American Graves Protection and Repatriation Act of 1990 and established a state commission with statutory powers to assure that federal and state laws regarding the repatriation of Native American human remains and items of patrimony are fully complied with. In addition, AB 978 also included non-federally recognized tribes for repatriation.

LOCAL

City of Novato General Plan

The City of Novato General Plan contains the following goals and policies that are relevant to proposed project in terms of cultural resources:

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.

City of Novato Municipal Code Section 4-7

Novato Municipal Code Section 4-7, Cultural Resources, establishes procedures for preserving and studying important cultural resources. This section requires approval of an Archaeological Investigation Permit prior to construction activity that would disturb cultural resources. Section 4-7 also requires that records of archaeological investigations conducted pursuant to the section be kept at San Francisco State University, Sonoma State University, the Marin Miwok Museum, and the City Community Development Department.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact on cultural resources if it will:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5;
- Cause a substantial adverse change in the significance of archaeological resource pursuant to CEQA Guidelines §15064.5;
- Directly or indirectly destroy a unique paleontological resource; and/or
- Disturb any human remains, including those interred outside of formal cemeteries.

IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Potential to cause a substantial adverse change in the significance of a historical or archaeological resource, or directly or indirectly destroy or disturb a unique paleontological resource, or disturb human remains (Potentially Significant)

Implementation of the proposed Housing Element does not, in and of itself, construct new housing in the City. However, the proposed Housing Element does facilitate the development of residential units by providing policies and programs that would promote housing for all persons. As shown in Table 2.0-1 in the Project Description, the Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. Many of the programs in the Housing Element will not affect cultural resources, including programs that commit the City to considering various housing related issues, but either do not require any specific action or the action associated with the program will be determined in the future (HO Programs 4.A, 5.D, 5.F, 5.I, 5.J, 6.B, 6.C, 7.A, 7.E, 7.F, 8.B, 9.A, 9.C, 9.D, 11.A, 14.A, 14.B, 15.A, 15.B), programs for continued implementation of adopted or existing standards and regulations (HO Programs 2.A, 2.B, 4.B, 5.B, 5.K, 8.A, 9.D, 11.A), programs involving City processing of housing projects (9.F, 9.G, 9.H, 9.I, 12.C, 13.A), programs involving coordination with various agencies, organizations, and property owners (HO Programs 1.B, 1.C, 5.E, 5.G, 5.H, 6.A, 7.B, 7.D, 10.A, 12.B, 13.B, 14.C), programs that affect management of housing (HO Programs 5.A), and programs involving outreach and the dissemination of information regarding housing issues (HO Programs 1.A, 5.C, 5.G, 7.F, 13.C).

While some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts(HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts (Program 12.D), allowing farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Table 2.0-1, these programs would not change the location of allowed urban uses or significantly increase the intensity of future

development and thus would not have the potential to impact historical, archaeological, or paleontological resources or human remains.

The following Housing Element programs contemplate specific actions that would accommodate increased development densities and intensities that could result in future development that may impact historical, archaeological, or paleontological resources or human remains. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an Affordable Housing Overlay district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (up to 30 units per acre) for senior housing on the five AHO sites.

As described above, the AHO sites are located in an area known to have cultural and historical resources. Consistent with General Plan CI Policy 30, a review of known cultural resources information, including an NWIC record search and Native American information request, was conducted to determine the potential for cultural resources on the AHO sites. The Federated Indians of the Graton Rancheria indicated that all of the sites are in locations sensitive for Native American resources. AHO Sites 1, 3, 4, and 5 have been previously surveyed for cultural resources. AHO Site 2 is covered in concrete and there is minimal potential for a surface resource. Site CA-MRN-678 is located on one of the AHO sites; however, the location of this resource is confidential.

Subsequent development projects will be required to be consistent with CI Programs 30.1 through 30.5. CI Program 30.2 requires that development project applicants conduct research to determine if a proposed development location has been previously surveyed, and if no survey has been conducted, to have a survey performed on the site. Significant resources must be examined by a consulting archaeologist (CI Program 30.1). If significant resources are identified during the survey or construction activities, CI Program 30.3 requires that the development be designed to avoid impacts and provides a number a methods to achieve avoidance.

The site CA-MRN-678 is located partially within a setback area and is not anticipated to pose a significant constraint to development, depending on the design of the construction. It only occupies a portion of the property and construction could take place elsewhere on the site without impacting CA-MRN-678. CA-MRN-678 is capped by flood deposits, so indirect impacts are not a major concern. Other than CA-MRN-678, there are no concerns due to previously recorded cultural resources for any of the other four AHO sites or the emergency shelter area for construction of housing.

In addition to the potential to affect CA-MRN-678, there is also the possibility that a previously undiscovered site, such as a subsurface site, or a paleontological resource may be located on the AHO and emergency shelter sites. These sites may be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Impacts to cultural and historic resources are **potentially significant**.

MITIGATION MEASURES

Mitigation Measure 3.4-1*: As part of the City of Novato's design review and entitlement process for any development on AHO Sites 1, 2, 3, 4, and 5 and the emergency shelter site, the project applicant shall have a project-specific cultural resources report prepared by a qualified archaeologist. As part of the cultural resources report, the report preparer shall contact the*

Federated Indians of the Graton Rancheria to determine if there are any known prehistoric resources of interest to the Graton Rancheria on the site.

If any potentially eligible resources are identified, then the archaeologist shall identify mitigation recommendations. The City and Project applicant shall consider the recommendations and the project applicant shall implement all measures deemed feasible and appropriate by the City and sufficient to reduce the impact to less than significant. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, and other appropriate measures. The implementation of mitigation shall be formally documented in writing and submitted to the City Planning Department as verification that the mitigation has occurred.

Timing/Implementation: During design review and entitlement

Enforcement/Monitoring: City of Novato Community Development Department

Mitigation Measure 3.4-2: *As part of the City of Novato's design review and entitlement process for any development on the AHO site containing CA-MRN-678 (formerly CA-MRN-352), the project applicant shall design future development to avoid CA-MRN-678 consistent with General Plan CI Program 30.4.*

Timing/Implementation: During design review and entitlement; avoidance implemented during all ground-disturbing activities

Enforcement/Monitoring: City of Novato Community Development Department

Mitigation Measure 3.4-3*: If any cultural resources, including prehistoric or historic artifacts, other indications of archaeological resources, paleontologic resources, or human remains are found during grading and construction activities on any of the five AHO sites or the emergency shelter site, all work shall be halted immediately within a 200-foot radius of the discovery.*

- *If cultural resources are identified, an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, shall be consulted to evaluate the find(s). Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR.*
- *If a potentially eligible resource is encountered, then the archaeologist shall identify mitigation recommendations. The City and Project applicant shall consider the recommendations and the project applicant shall implement all measures deemed feasible and appropriate by the City. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, and other appropriate measures. The implementation of mitigation shall be formally documented in writing and submitted to the City Planning Department as verification that the provisions in CEQA for managing unanticipated discoveries have been met.*
- *If Native American resources are identified, a Native American monitor, following the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites established by the Native American Heritage Commission, may also be required and, if required, shall be retained at the Applicant's expense.*

- *If human remains are discovered, all work shall be halted immediately within 200 feet of the discovery, the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.*

  Timing/Implementation: *As a condition of Project approval and implemented during all ground-disturbing activities*

  Enforcement/Monitoring: *City of Novato Community Development Department*

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure 3.4-1 would ensure that each AHO site and the emergency shelter site is reviewed to address the presence of cultural resources and that Native American concerns are identified and addressed appropriately. Implementation of Mitigation Measure 3.4-2 would ensure that CA-MRN-678 is avoided by subsequent development and that the cultural resource value of the site would be retained. Implementation of Mitigation Measure 3.4-3 would ensure that if any previously undiscovered cultural or paleontologic resources or human remains are encountered, appropriate steps will be taken to identify the significance of the resources and mitigate any potential impacts. With implementation of Mitigation Measures MM 3.4-1 through 3.4-3, potential impacts to cultural and prehistoric resources, paleontological resources, and human remains will be **less than significant.**

REFERENCES

City of Novato 2007. *City of Novato General Plan – Revision October 9, 2007.* Novato, California. Resolution No. 122-07.

City of Novato 2009. *Existing Conditions Report.* Novato, California. March 25, 2009.

Peak & Associates 2013. *Cultural Resources Assessment of the Novato Affordable Housing Project.* Peak & Associates, Inc. El Dorado Hills, California. July 2013.

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The purpose of this section is to disclose and analyze the potential impacts associated with the geology of the project region and general vicinity, and to analyze issues such as the potential exposure of people and property to geologic hazards, landform alteration, and erosion.

This section is based in part on the following technical studies: *Earthquake Shaking Potential for California map, Spring 2003*, (CGS 2003)*, City of Novato General Plan – Revision October 9, 2007* (City of Novato 2007), *Environmental Review Guidelines* (City of Novato 2000), *Existing Conditions Report* (City of Novato 2009), *Marin Countywide Plan Geology, Mineral Resources and Hazardous Materials Technical Background Report* (Marin County 2005), and the *Marin Countywide Plan Map 3-5 Location of Mineral Resource* (Marin County 2007).

No comments were received during the public review period or scoping meeting for the Notice of Preparation regarding this topic.

3.5.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

Novato is located in the Coast Range Physiographic province of California. The features of this province were formed by tectonic forces resulting in extensive uplifting, folding and faulting of the area. Northwest trending elongated ridges and intervening valleys characterize the province. The northern and western portion of Novato is underlain by bedrock of the Franciscan Formation of Late Jurassic to Cretaceous age. The Franciscan Formation consists of a mixture of metamorphosed sandstone, shale, volcanics, serpentine and chert. The eastern area of Novato is underlain by the Late Jurassic to Late Cretaceous of the Great Valley Sequence, consisting of the Novato Conglomerate believed to have been tectonically thrust over the Franciscan Formation rocks (City of (Novato 2009, pg. 10-3).

LOCAL GEOLOGY

Soil Conditions

Surficial soils in Novato vary considerably. Soils are comprised primarily of deposits from streams, flood basins and mountain runoff known as alluvium. The low-lying alluvium deposits consist of sand, gravel, silt and small amounts of clay (City of Novato 2009, pg. 10-3).

Holocene estuarine, tidal, lagoonal deposits of fine sands, silts, clays and sporadic outcroppings of peat (generally referred to as Young Bay Mud) are exposed along the San Francisco Bay margin, along the Petaluma River, and in the Bahia area in the northern part of Novato. Areas of engineered fill placed over bay mud are found in the central to southeastern area between the former Hamilton Air Force Base and Bel Marin Keys, between the Northwest Pacific Railroad and Highway 101 in the vicinity of Novato Creek, and southward to Novato Boulevard and south of Highway 37 (City of Novato 2009, pg. 10-3).

Engineered levee fill is found in low lying areas along Novato Creek, near the Petaluma River and along roads associated with the former Hamilton Air Force Base. Engineered fill is also used in

scattered areas of low elevation, primarily below Highway 101 and the railroad (City of Novato 2009, pg. 10-4).

Mineral Resources

The primary extractive resources in and around the Novato area are sand and gravel. Crushed rock quarries are located on the southeast slopes of Mt. Burdell, but these operations are not currently active. Decorative fieldstone is located on the south side of Mt. Burdell. Sand and gravel have been produced in the Black Point area, but operations have not been active since the 1950s. The State Division of Mines and Geology has designated three sites as Resource Sectors in the Novato area (MRZ-2 zones) in Black Point, Burdell Mountain, and Bowman Canyon (City of Novato 2007, pg. III-6).

The 2005 Marin Geology, Mineral Resources and Hazardous Materials Technical Background Report provides the following information on the three areas within the City of Novato which were considered to contain mineral resources (Marin County 2005, pg. 64):

- Black Point - Novato Conglomerate: This site is located within the city limits of Novato and is an alluvial resource, which contains a thick accumulation of well-rounded pebbles, cobbles and boulders in a well-cemented sandy matrix. This material has been found to be suitable for the use of Portland Concrete Cement. It is calculated that this deposit could potentially yield 18.47 million tons of material. The high degree of weathering in the deposit has required a thorough washing of the aggregate. Field geologic mapping indicates that this mineral deposit is relatively evenly distributed throughout the city. This deposit is primarily urbanized except for outcroppings located to each distal edge.

- Black Point - Novato Conglomerate: This site is located at the Stone Tree Golf Club and associated single-family residences and was once quarried for the conglomerate it contains. The material in this sector is a similar alluvial deposit as in Sector D-1. This site is now primarily urbanized, and future extraction activities at this site are not anticipated.

- Burdell Mountain Open Space Preserve - Sonoma Volcanics Andesite: This site also contains hard, dense andesite suitable for asphaltic concrete aggregate. It is owned by the Marin County Open Space District and located within Novato city limits. It is a management policy of the District to prohibit the collection or exploitation of minerals from its lands, as these activities are incompatible with the Open Space use of the land.

FAULTS AND SEISMICITY

The United States Geological Survey (USGS) has established National Seismic Zone Maps for all of the U.S. These maps are the basis for seismic design provisions of building codes, insurance rate structures, earthquake loss studies, retrofit priorities, and land-use planning. Their use in design of buildings, bridges, highways, and critical infrastructure allows structures to better withstand earthquake shaking, saving lives and reducing disruption to critical activities following a damaging event. The maps also help engineers avoid costs from over-design for unlikely levels of ground motion. There are four zones in the U.S., ranging from 1 to 4; the higher the number the higher the earthquake danger. All of California lies within Seismic Zone 3 or 4. Novato is located in Seismic Zone 4.

Faults

A fault is a fracture in the crust of the earth along which rocks on one side have moved relative to those on the other side. A fault trace is the line on the earth's surface defining the fault. Displacement of the earth's crust along faults releases energy in the form of earthquakes and in some cases in fault creep. Most faults are the result of repeated displacements over a long period of time.

Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures have been known to extend up to 50 miles with displacements of an inch to 20 feet. Fault rupture almost always follows preexisting faults, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking.

The State of California designates faults as active, potentially active, and inactive depending on how recent the movement that can be substantiated for a fault. Table 3.5-1 presents the California fault activity rating system.

TABLE 3.5-1: FAULT ACTIVITY RATING

FAULT ACTIVITY RATING	*GEOLOGIC PERIOD OF LAST RUPTURE*	*TIME INTERVAL (YEARS)*
Active (A)	Holocene	Within last 11,000 years
Potentially Active (PA)	Quaternary	11,000-1.6 Million Years
Inactive (I)	Pre-Quaternary Greater than 1.6 Million	

Seismicity

The amount of energy available to a fault is determined by considering the slip-rate of the fault, its area (fault length multiplied by down-dip width), maximum magnitude, and the rigidity of the displaced rocks. These factors are combined to calculate the moment (energy) release on a fault. The total seismic energy release for a fault source is sometimes partitioned between two different recurrence models, the characteristic and truncated Gutenberg-Richter (G-R) magnitude-frequency distributions. These models incorporate our knowledge of the range of magnitudes and relative frequency of different magnitudes for a particular fault. The partition of moment and the weights for multiple models are given in the following summary.

Earthquakes are generally expressed in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. By comparison, magnitude is based on the amplitude of the earthquake waves recorded on instruments, which have a common calibration. The Richter scale, a logarithmic scale ranging from 0.1 to 9.0, with 9.0 being the strongest, measures the magnitude of an earthquake relative to ground shaking. Table 3.5-2 provides a description and a comparison of intensity and magnitude.

TABLE 3.5-2: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

RICHTER MAGNITUDE	*MODIFIED MERCALLI SCALE*	*EFFECTS OF INTENSITY*
0.1 – 0.9	I	Earthquake shaking not felt
1.0 – 2.9	II	Shaking felt by those at rest.
3.0 – 3.9	III	Felt by most people indoors, some can estimate duration of shaking.
4.0 – 4.5	IV	Felt by most people indoors. Hanging objects rattle, wooden walls and frames creak.
4.6 – 4.9	V	Felt by everyone indoors, many can estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle and glasses clink. Doors open, close and swing.
5.0 – 5.5	VI	Felt by all who estimate duration of shaking. Sleepers awaken, liquids spill, objects are displaced, and weak materials crack.
5.6 – 6.4	VII	People frightened and walls unsteady. Pictures and books thrown, dishes and glass are broken. Weak chimneys break. Plaster, loose bricks and parapets fall.
6.5 – 6.9	VIII	Difficult to stand. Waves on ponds, cohesionless soils slump. Stucco and masonry walls fall. Chimneys, stacks, towers, and elevated tanks twist and fall.
7.0 – 7.4	IX	General fright as people are thrown down, hard to drive. Trees broken, damage to foundations and frames. Reservoirs damaged, underground pipes broken.
7.5 – 7.9	X	General panic. Ground cracks, masonry and frame buildings destroyed. Bridges destroyed, railroads bent slightly. Dams, dikes and embankments damaged.
8.0 – 8.4	XI	Large landslides, water thrown, general destruction of buildings. Pipelines destroyed, railroads bent.
8.5 +	XII	Total nearby damage, rock masses displaced. Lines of sight/level distorted. Objects thrown into air.

Alquist-Priolo Special Study Zone

The California legislature passed the Alquist-Priolo Special Studies Zone Act in 1972 to address seismic hazards associated with faults and to establish criteria for developments for areas with identified seismic hazard zones. The California Geologic Survey (CGS) evaluates faults with available geologic and seismologic data and determines if a fault should be zoned as active, potentially active, or inactive. If CGS determines a fault to be active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake Hazard Act. Alquist-Priolo Special Study Zones are usually one-quarter mile or less in width and require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site. Novato is not located in an Alquist-Priolo Special Study Zone.

Active and Potentially Active Faults

Novato is located in the seismically active San Francisco Bay region, an area with a long and complex history of tectonic movements. The region is situated on a plate boundary marked by the San Andreas fault system, which consists of several northwest trending active and potentially active faults. In the Bay Area, movement along this plate boundary is distributed across a complex system of strike-slip, right-lateral, parallel and sub-parallel faults. In the Novato area, these include

the San Andreas, Burdell Mountain, Tolay, Rodgers Creek, and Hayward fault zones, as shown on Figure 3.5-1. The nearest potentially active fault is the Burdell Mountain fault, which is located within Novato's Sphere of Influence (City of Novato 2009, pg. 10-4).

The CDMG has defined potentially active faults as those for which there is evidence of surface displacement within the Quaternary period; that is approximately within the last 1.6 million years. Faults classified as potentially active show no evidence of surface displacements within the past 11,000 years, but this period of time is short in geologic terms. The Tolay and Burdell Mountain faults are considered potentially active. Novato could be subject to damage from movement on any one of the active or potentially active Bay Area earthquake faults. Table 3.5-3 lists the nearest active and potentially active faults to Novato, maximum expected earthquake and magnitude. The sections below describe each of these faults.

TABLE 3.5-3: ACTIVE AND POTENTIALLY ACTIVE FAULTS IN THE VICINITY OF NOVATO

NAME	*TYPE*[A]	*APPROXIMATE DISTANCE FROM NOVATO (IN MILES)*	*MAXIMUM MAGNITUDE*[B] *(MW)*
Hayward	A	*13.7*	*7.10*
Rodgers Creek	A	*4.8*	*7.00*
Tolay	B	*NA*[C]	*0.0*
San Andreas	A	*9.5*	*7.90*
Burdell Mountain	B	*4.8*	*NA*[C]

SOURCE: CITY OF NOVATO 2009, PG. 10-7

NOTES: a) Type A = active fault; Type B = potentially active fault.

b) Moment magnitude is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event. The maximum moment magnitude earthquake data are from *Earthquake Probabilities in the San Francisco Bay Region: 2000 to 2030* (USGS, 1999).

c) NA = Not Available. There is no data on the maximum magnitude of potentially active faults, since there is no lithologic evidence that forms the basis for the calculations of the other numbers.

SAN ANDREAS FAULT

The San Andreas fault is active and represents the principal seismic hazard in northern California. The San Andreas fault is an active fault based on both recorded historical activity and geologic displacement. The main trace of the San Andreas fault trends northwest-southeast and extends over 700 miles from the Gulf of California through the Coast Ranges to Point Arena, where the fault extends offshore. Surface rupture during historic earthquakes, fault creep and historic seismicity confirm that the San Andreas fault and its branches (the Hayward, Calaveras and San Gregorio faults) are all active today. The San Andreas fault is approximately 9.5 miles west of the Novato City limit (City of Novato 2009, pg. 10-6).

Historical earthquakes along the San Andreas fault and its branches have caused significant seismic shaking in the East Bay region. The most recent large historical earthquake on the San Andreas fault to affect the area was the magnitude 6.9 Loma Prieta earthquake in 1989. The Loma Prieta earthquake caused intense seismic activity throughout the Bay Area, with most damage focused in lowland infill areas.

HAYWARD FAULT

The Hayward Fault is an active fault, as determined by both recorded historical activity and geologic displacement. The Hayward fault zone is the southern extension of a fracture zone that includes the Rodgers Creek fault (discussed below), the Tolay fault (discussed below), the Healdsburg fault (located in Sonoma County) and the Mayacama fault (located in Mendocino County). The Hayward fault trends to the northwest within the East Bay, extending 60 miles south from San Pablo Bay in Richmond to San Jose, where it converges with the Calaveras fault, a similar type of fault that extends north to Suisun Bay. Historically, the Hayward fault generated two sizable earthquakes, both in the 1800s. The USGS Working Group on California Earthquake Probabilities includes the Hayward–Rodgers Creek fault systems in the list of those faults that have the highest probability of generating earthquakes of magnitude 6.7 and greater (City of Novato 2009, pg. 10-8).

RODGERS CREEK FAULT

The Rodgers Creek fault is active based on the geologic record. The Rodgers Creek fault is believed to be entirely locked (i.e. no recognized creep, less than 2 mm/yr). No major earthquake has historically occurred along the Rodgers Creek fault (City of Novato 2009, pg. 10-8).

TOLAY FAULT

The Tolay Fault is considered potentially active. The Tolay fault, a northern extension of the Hayward fault, is a northwest-trending structure that has shown little if any strike-slip displacement. The fault is an approximately 600 meter zone characterized as a schuppen structure with slivers of Franciscan rock, sheared siltstone and gravel of the Miocene Petaluma Formation (City of Novato 2009, pg. 10-8).

BURDELL MOUNTAIN FAULT

The Burdell Mountain Fault is considered potentially active. The Burdell Mountain Fault is similar in nature to the Hayward fault, but with lesser magnitude, slip and recurrence interval potential. Mapped geologic relationships suggest that the Burdell Mountain fault is an important component of the regional fault zone. Geologic evidence shows that movement has occurred on the Burdell Mountain fault zone within the past 11,000 years, suggesting that it might be active. However, at this time, the Burdell Mountain fault zone is classified as potentially active. The Burdell Mountain fault occurs within Novato's SOI (City of Novato 2009, pg. 10-8).

SEISMIC HAZARDS

Seismic Ground Shaking

The potential for seismic ground shaking in California is expected. As a result of the foreseeable seismicity in California, the State requires special design considerations for all structural improvements in accordance with the seismic design provisions in the California Building Code. These seismic design provisions require enhanced structural integrity based on several risk parameters. Seismic ground shaking on the project site is expected during the life of the project. All structures will be built in accordance with the seismic design standards in California.

Fault Rupture

A fault rupture occurs when the surface of the earth breaks as a result of an earthquake, although this does not happen with all earthquakes. These ruptures generally occur in a weak area of an existing fault. Ruptures can be sudden (i.e. earthquake) or slow (i.e. fault creep). The Alquist-Priolo Fault Zoning Act requires active earthquake fault zones to be mapped and it provides special development considerations within these zones.

Ground rupture is a hazard only in areas immediately adjoining a fault. The only fault trace that traverses the city is the Burdell Mountain fault, which is potentially active. The geologic record indicates that it is a quaternary fault with an age of last movement in the 1.6-million-year timeframe. The Burdell Mountain fault therefore has minimal potential for causing ground rupture. All other faults in the region are outside the Novato plan area limits (city of Novato 2009, pg. 10-9).

Liquefaction

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. The potential for liquefaction is highest when groundwater levels are high, and loose, fine, sandy soils occur at depths of less than 50 feet.

Areas in Novato with soils susceptible to liquefaction are primarily located in low-lying area of fill fronting San Pablo Bay, as shown in Figure 3.5-3. The Early to Late Pleistocene deposits and Holocene estuarine deposits (Bay Mud) are considered to have a medium liquefaction potential. Generally the low-lying areas within the mapped 100- or 500-year floodplain (see Figure 3.8-3, Section 3.8) will be more prone to liquefaction, especially where underlain by fill. Upland areas within the city have a low to very low potential for liquefaction.

Lateral Spreading

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills surrounding the city.

NON-SEISMIC HAZARDS

Expansive Soils

Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wet. If structures are underlain by expansive soils, it is important that foundation systems be capable of tolerating or resisting any potentially damaging soil movements.

Moisture content and the percentage and type of clay minerals present in the soil determine the potential volume change of an expansive soil. Soils composed only of sand and gravel have no

potential for volume change due to moisture change. Soils containing clays have variable potential for volume changes. Such soils are generally classified into three expansive soils classes with low, moderate and high potential for volume changes:

- Low: This soil class includes sands and silts with relatively low amounts of clay minerals. Sandy clays may also have low expansion potential, if the clay is kaolinite. Kaolinite is a common clay mineral.
- Moderate: This class includes silty clay and clay textured soils if the clay is kaolinitic and also includes heavy silts, light sandy clays and silty clays with mixed clay minerals.
- High: This class includes clays and clay with mixed monmorillonite, a clay mineral that expands and contracts more than kaolinite.

Soils with no or low expansion potential occur along stream and river valleys and on steep mountain slopes. Soils of high expansion potential in Novato generally occur east of Highway 101. See Figure 3.5-4.

Erosion

Erosion naturally occurs on the surface of the earth as surface material (i.e. rock, soil, debris, etc.) is loosened, dissolved, or worn away, and transported from one place to another by wind or water. The steepness of a slope is an important factor that affects soil erosion. Erosion potential in soils is influenced primarily by loose soil texture and steep slopes. Loose soils can be eroded by water or wind forces, whereas soils with high clay content are generally susceptible only to water erosion. The potential for erosion generally increases as a result of human activity, primarily through the development of facilities and impervious surfaces and the removal of vegetative cover.

Landslides

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. The size of landslides can vary from tiny events containing less than a cubic yard of material to massive slides containing millions of cubic yards. Large landslides may move downslope for hundreds of yards, or even several miles. A landslide may move rapidly, as in a soil or rock avalanche, or it may move slowly for hours or even weeks. A similar but much slower movement is called creep. Landslides may be limited to recent activity or be ancient landslide masses that display relative stability. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill).

The susceptibility of a given area to landslides depends on many variables. However, the general characteristics that influence landslide hazards are well understood and it is possible to map areas in terms of general susceptibility to landslides. There are a number of important factors that dictate the probable formation and relative risk of landslide or slope instability. These include:

- Slope Material: Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils or hard bedrock.

- Slope Steepness: Most landslides occur on moderate to steep slopes.
- Structure and physical properties of materials, including the orientation of layering and zones of weakness relative to slope direction.
- Water Content: Increased water content increases landslide hazard by decreasing resistance to sliding and adding weight to the materials on a slope.
- Vegetation Coverage: Abundant vegetation with deep roots increases slope stability.
- Proximity to Areas of Erosion or Man-Made Cuts: Undercutting slopes may greatly increase landslide potential.
- Earthquake Ground Motions: Strong ground shaking may trigger landslides in marginally stable slopes or loosen slope materials and thus increase the risk of future landslides.

Figure 3.5-3 shows the potential for landslides to occur in the City. Landslides are not common in the lower elevation areas due to relatively flat grades. As shown in the figure, landslides more commonly occur in the upland areas. However, the Novato conglomerate in hilly areas is relatively stable with a low risk of landslide. Many of the hills have shallow soil with Franciscan bedrock very close to the surface, resulting in low to moderate landslide potential.

Subsidence

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils.

Subsidence problems are common in the diked baylands of Novato because of the highly compressible nature of the existing fill. Areas susceptible to earthquake induced settlement include those areas underlain by thick layers of colluvial material or un-engineered fill. Land subsidence has occurred within the low lying areas, mainly along the Bay margins. The loss of water within the Bay Mud along the Bay margins has led to subsidence, and many areas, such as the former Hamilton Air Force Base, are now below mean sea level and require pumping to drain (City of Novato 2009, pg. 10-14).

3.5.2 REGULATORY SETTING

STATE

The State of California has established a variety of regulations and requirements related to seismic safety and structural integrity, including the California Building Code, the Alquist-Priolo Earthquake Fault Zoning Act, and the Seismic Hazards Mapping Act.

California Building Code

The California Building Code (CBC) is included in Title 24 of the California Code of Regulations (CCR) and is a portion of the California Building Standards Code. The CBC incorporates the Uniform Building Code, a widely adopted model building code in the United States. Through the CBC, the state provides a minimum standard for building design and construction. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control. As required by Section 1803 of the CBC, geotechnical investigations must be prepared for all new multifamily projects prior to the issuance of building permits.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 sets forth the policies and Criteria of the State Mining and Geology Board, which governs the exercise of governments' responsibilities to prohibit the location of developments and structures for human occupancy across the trace of active faults. The policies and criteria are limited to potential hazards resulting from surface faulting or fault creep within Earthquake Fault Zones, as delineated on maps officially issued by the State Geologist. Working definitions include:

- Fault – a fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side;
- Fault Zone – a zone of related faults, which commonly are braided and sub parallel, but may be branching and divergent. A fault zone has a significant width (with respect to the scale at which the fault is being considered, portrayed, or investigated), ranging from a few feet to several miles;
- Sufficiently Active Fault – a fault that has evidence of Holocene surface displacement along one or more of its segments or branches (last 11,000 years); and
- Well-Defined Fault – a fault whose trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The geologist should be able to locate the fault in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success.

"Sufficiently Active" and "Well Defined" are the two criteria used by the State to determine if a fault should be zoned under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically-induced landslides. Under the Act, seismic hazard zones are to be mapped by the State Geologist to assist local governments in land use planning. The program and actions mandated by the Seismic Hazards Mapping Act closely resemble those of the Alquist-Priolo Earthquake Fault Zoning Act (which addresses only surface fault-rupture hazards) and are outlined below:

The State Geologist is required to delineate the various "seismic hazard zones."

- Cities and Counties, or other local permitting authority, must regulate certain development "projects" within the zones. They must withhold the development permits for a site within a zone until the geologic and soil conditions of the site are investigated and appropriate mitigation measures, if any, are incorporated into development plans.
- The State Mining and Geology Board provides additional regulations, policies, and criteria, to guide cities and counties in their implementation of the law. The Board also provides guidelines for preparation of the Seismic Hazard Zone Maps and for evaluating and mitigating seismic hazards.
- Sellers (and their agents) of real property within a mapped hazard zone must disclose that the property lies within such a zone at the time of sale.

LOCAL

City of Novato General Plan

The City of Novato General Plan contains the following policies that are relevant to geotechnical aspects of the proposed project:

EN Policy 40 Mineral Resources. Designate mineral resources as required by the State Division of Mines and Geology as mineral resource sites.

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

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

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 Policy 7 Water Quality. Encourage protection of water resources from pollution and sedimentation, and preserve their environmental and recreation values.

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 Policy 37 Using CEQA to Reduce Water Quality Impacts. 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.

City of Novato Building Code

The City of Novato has adopted the state codes as set forth by the State of California Building Standards Commission. Following are the codes in effect at this time:

- 2010 California Administrative Code
- 2010 California Building Code
- 2010 California Plumbing Code
- 2010 California Electrical Code
- 2010 California Mechanical Code

The codes apply to new construction as well as modifications to existing structures. Many types of permits do not require the preparation of plans or blueprints, such as water heater and/or heating and air conditioning replacements, installation of water softeners, and roof replacements. These types of permits may be issued over the counter. When the scope of work requires the submittal of building plans, those plans are reviewed by City staff for compliance with the applicable codes. When the plan reviewed is completed and the plans have been approved, a permit can be issued. The 2010 CBC requires the preparation of site-specific soils or geotechnical reports by a professional engineer prior to the issuance of building permits. The soils or geotechnical report must also contain engineering measures, if applicable, to reduce or avoid impacts associated with geotechnical and soils hazards.

Novato Municipal Code

CITY OF NOVATO HILLSIDE AND RIDGELINE PROTECTION ORDINANCE

Novato Zoning Code Section 19.26, Hillside and Ridgeline Protection, establishes development standards for hillside areas to reduce the potential for slope failure and exposure to other soil-related hazards. The ordinance requires reduced development intensity in areas with steep slopes and establishes design requirements for buildings proposed in hillside areas. Site-specific geotechnical reports are required by the City of Novato for any development in areas prone to landslides.

SECTION 5-37 SEWAGE DISPOSAL

Section 5-37 of the Municipal Code was established in order to prevent health hazards which would otherwise result and to provide for the orderly and efficient development of the City of Novato.

5-37.008 Standards.

a. General. All affected projects shall provide for sewage disposal in a sanitary manner which provides for the public health and safety.

b. Specific.
    1. All developments and use proposals shall include provisions for connection to the public sewage facilities of the Novato sanitary district or other publicly-owned sewage facilities.
    2. Where a development or use proposal involves an existing private sewage disposal system, such system shall be discontinued and a connection to publicly-owned facilities shall be made.

SECTION 6 EXCAVATIONS AND FILLS

Section 6 of the Municipal Code establishes minimum requirements for excavating, grading and filling on all private properties within the city in order that these properties and the properties adjacent thereto may be afforded reasonable protection against hazards of such activities, and to establish procedures by which these requirements are to be enforced. It is the responsibility of the developer, engineer, contractor or owner to obtain and pay for the services of an engineer and soils engineer.

SECTION 9-15 SOILS REPORT

Unless waived in accordance with subsection 9-15.004, a soil report shall be submitted with every final map or parcel map application. The city council or city engineer may approve final maps or parcel maps, respectively involving potential hazards due to soil/geologic conditions only if they find that the recommendations contained in the soil report will reasonably preclude damage, injury or loss of life from the identified hazardous condition. The term "reasonably preclude" as used in this section means that the technical evaluation, consistent with current common practice of civil engineering or engineering geology indicates that all hazardous conditions can and will be stabilized to the degree that no damage to life, property or improvements is expected.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on geology, soils, and minerals if it will:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning map, issued by the State Geologist for the area or based on other substantial evidence of a known fault; or
    - Strong seismic ground shaking; or
    - Seismic-related ground failure, including liquefaction;
    - Landslides?
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and/or
- 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.

IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a fault, strong seismic ground shaking or seismic related ground failure (Less than Significant)

As shown in Table 2.0-1 in the Project Description, the Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to geologic hazards and soils. For example, HO Program 1.A calls for public outreach efforts to expand the public's understanding of the Housing Element and available programs and opportunities within the Housing Element. HO Program 2.A requires the inclusion of non-discrimination clauses in

rental housing and deed-restricted housing constructed with City assistance. While these types of implementation programs are critical to the success of the Draft Housing Element, they would not result in any physical changes to the environment, and as such, have no potential to result in impacts related to seismic hazards or geologic stability. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B. Below is a discussion of the policies and programs of the Draft Housing Element which are relevant to Impact 3.5-1.

HO Program 5.B would provide a benefit in terms of protecting life and property within Novato from geologic and seismic hazards. HO Program 5.B seeks to link code enforcement with public information programs, and would implement housing, building, and fire code enforcement to ensure compliance with basic health and safety building standards and provide information about rehabilitation loan programs for use by qualifying property owners who are cited. In particular, owners of structures that appear to be in declining or substandard condition would be contacted, inspection services would be offered, and programs that will assist in funding for structural rehabilitation will be promoted and advertised. The implementation of HO Program 5.B may assist in the rehabilitation of structures that do not currently meet current California seismic safety standards, which may reduce the potential for seismic and geologic-related damage to structures in the future.

Some of the programs in the Housing Element would expand the permitted uses on a site. For example, HO Program 12.A calls for the adoption of an ordinance allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks without a conditional use or other discretionary permit. This change in permitted use for emergency shelters would not result in impacts related to seismic or geologic hazards, since all structures converted or constructed for this purpose would be required to implement all applicable seismic safety standards contained in the California Building Code, and this program would not allow for new development in areas of the City that have not been previously developed with urban uses.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with strong seismic ground shaking or seismic related ground failure. The analysis below provides a discussion regarding the potential for seismic and geologic hazards to result from the future development of the five AHO sites.

The Novato area is identified as being in the higher level of earthquake hazards on the Earthquake Shaking Potential Map for California. These levels are considered to be in regions that are near major, active faults and will on average experience stronger earthquake shaking more frequently. This shaking can damage even strong modern buildings (CGS 2003). The Uniform Building Code places all of California in Zones 3 or 4 of the of greatest earthquake severity because recent studies indicate high potential for severe ground shaking. The Novato area is in Seismic Activity Intensity Zone 4. Novato could be subject to damage from movement on any one of the active or potentially

active Bay Area earthquake faults. Table 3.5-3 lists the nearest active and potentially active faults to Novato, including maximum expected earthquake and magnitude.

The five AHO sites are not traversed by any known earthquake faults or fault traces. As such, future development of multi-family residences on these sites would not expose people to substantial adverse effects, including the risk of loss, injury, or death, as a result of the rupture of a known earthquake fault. Based on these observations, the potential for such an impact is considered to be **less than significant**.

All five of the AHO sites are susceptible to strong ground shaking as a result of an earthquake generated by any one of the active and potentially active faults in the vicinity of Novato, including the Hayward, Rodgers Creek, Tolay, San Andreas, and Burdell Mountain faults. Given this circumstance, each site is subject to meeting the uniform seismic construction requirements of the California Building Code (CBC) as applicable to Seismic Zone 4. Compliance with the seismic safety standards of the California Building Code is mandatory for any new construction in the state.

These CBC requirements provide minimum building safety standards to minimize the potential for building collapse during a seismic event. Such requirements include site specific geotechnical investigations to inform the design of excavations, retaining walls, foundations (post and pier, grade beams, etc.), and structural elements (foundation anchoring, sheer walls, moment frames, etc.) of new buildings. A building designed and constructed to meet the seismic safety standards of the CBC is considered to have a **less than significant** impact with respect to exposing people or structures loss, injury, or death due to strong seismic ground shaking or seismic-related ground failure.

An analysis of impacts related to other forms of seismic-related ground failure, including landslides and liquefaction is provided in the discussion of Impact 3.5-3 below.

Impact 3.5-2: Result in substantial soil erosion or the loss of topsoil (Less than Significant)

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to geologic hazards and soils. The discussion under Impact 3.5-1 above, identifies which Draft Housing Element programs are relevant to the analysis of geologic and soils hazards, and identifies which programs have no relevance to this environmental topic.

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation at individual construction sites. Housing construction activities could also result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Additionally, there is the potential for erosion associated with stormwater runoff throughout the operational phase of a housing project. The potential for erosion is associated with the design of the improvements, structures, and landscaping.

The Housing Element includes numerous programs supporting the development of a range of housing types and densities in Novato. While the Housing Element does not permit a specific development project, its implementation could nonetheless lead to the development of new

residential units in Novato, in particular at the five identified AHO sites, resulting in construction activities with the potential to expose soils to erosion. This is an indirect impact of adoption of the Housing Element.

HO Program 12.A calls for the adoption of an ordinance allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks without a conditional use or other discretionary permit.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with erosion and the loss of topsoil.

The analysis below provides a discussion regarding the potential for erosion and the loss of topsoil to result from the future development of the five AHO sites, as well as the implementation of HO Program 12.A.

As required by the federal Clean Water Act, the National Pollution Discharge Elimination System (NPDES), and the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) each phase of proposed housing construction requires an approved Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices for grading and erosion control to prevent the loss of topsoil and the sedimentation of waterways. A SWPPP is a mandatory requirement of any construction project that would disturb one acre or more of land. When required, a SWPPP with a Notice of Intent must be submitted to the Regional Water Quality Control Board (RWQCB) to obtain a General Permit. The San Francisco Bay RWQCB is the agency responsible for reviewing the SWPPP and Notice of Intent for projects in Novato, prior to issuance of a General Permit for the discharge of stormwater during construction activities. A SWPPP will be required for the construction of multi-family residential units at the AHO sites, recognizing each site is larger than one-acre in area.

In addition to the requirements of the CWA, NPDES, and MCSTOPPP, the Novato General Plan has a number of policies designed to protect water quality from impacts associated with erosion. Water quality is impacted by erosion and the loss of topsoil through sedimentation, which may occur if runoff from construction sites is not properly detained, controlled and treated. As such, policies designed to protect water quality also reduce the potential for erosion. EN Policy 4 minimizes soil disturbance and surface runoff in the Stream Protection Zones. EN Policy 7 assists in the protection of water resources from sedimentation and therefore erosion. EN Policy 35 requires a restoration of the natural hydrological characteristics of watersheds and thereby reduces the loss of topsoil. EN Policy 37 requires the use of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion and sedimentation resulting from development.

As noted above, future development at the AHO sites identified in the Draft Novato Housing Element and any other residential project disturbing a one-acre area would be required to prepare and implement a site-specific SWPPP, which would include detailed best management practices to

reduce erosion and the loss of topsoil during construction activities. Best management practices include: installing straw wattles, silt fences, and erosion control blankets; covering exposed soil with straw mulch; water sweeping streets of tracked mud and dirt; covering soil stockpiles; and protecting drain inlets with gravel bags. As described in Section 3.2, Air Quality, future construction activities are required to implement Mitigation Measure 3.2-2, which includes additional requirements to reduce soil erosion and the loss of topsoil during construction activities due to wind. These requirements include watering haul roads, covering and revegetating areas of exposed soil, and other best management practices that would reduce wind-born soil erosion impacts. Implementation of a SWPPP and its associated best management practices combined with the requirements of Mitigation Measure 3.2-2 would reduce the potential for erosion and loss of topsoil to a **less than significant** level.

Impact 3.5-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of project implementation, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse (Less than Significant)

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to geologic hazards and soils. The discussion under Impact 3.5-1 above, identifies which Draft Housing Element programs are relevant to the analysis of geologic and soils hazards, and identifies which programs have no relevance to this environmental topic.

The Housing Element includes numerous programs supporting the development of a range of housing types and densities in Novato. While the Housing Element does not permit a specific development project, its implementation could nonetheless lead to the development of new residential units in Novato, in particular at the five identified AHO sites, potentially resulting in construction activities on geologically unstable soil units. This is an indirect impact of adoption of the Housing Element.

HO Program 12.A calls for the adoption of an ordinance allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks without a conditional use or other discretionary permit.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with geologically unstable soil units.

The analysis below provides a discussion regarding the potential for geologic hazards, including liquefaction, lateral spreading, landslides, soil collapse and subsidence to result from the future development of the five AHO sites. Each of these geologic hazards is discussed separately below.

LIQUEFACTION

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. As shown on Figure 3.5-2, all of the AHO sites are in what is considered to be an area of high liquefaction potential. All tentative maps in the City require a soils report (Section 9-15, Soil Reports, of the Municipal Code). Additionally, the California Building Code (CBC) requires the preparation of a soils report or geotechnical report prior to the issuance of building permits for new projects. This report would identify the potential for liquefaction for an individual project site, as well as provide specific engineering measures and structural design recommendations to resist liquefaction, and meet appropriate minimum factors of safety identified in Section 18 of the 2010 CBC based on site specific soil conditions.

LATERAL SPREADING

Lateral spreading typically results when ground shaking moves soil toward an area where the soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas of liquefaction. Areas in the region that are susceptible to this hazard are located along creeks or open water bodies, or within the foothills surrounding the City. AHO Sites 1 (1787 Grant Avenue) and 5 (1905 Novato Boulevard) are located adjacent to creeks. The soils report required by the CBC would identify the potential for lateral spreading for an individual project site, as well as provide specific engineering measures and structural design recommendations to resist lateral spreading, and meet appropriate minimum factors of safety identified in Section 18 of the 2010 CBC based on site specific soil conditions as appropriate..

LANDSLIDES

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). Figure 3.5-3 shows the potential for landslides to occur in the city. Landslides are not common in the lower elevation areas due to relatively flat grades. As shown in the figure, landslides more commonly occur in the upland areas. However, the Novato conglomerate in hilly areas is relatively stable with a low risk of landslide. Many of the hills have shallow soil with Franciscan bedrock very close to the surface, resulting in low to moderate landslide potential. AHO Site 3 (Redwood Boulevard/Black John Road) is in the vicinity of an area considered to have high landslide potential. However, the 4-acre area identified for housing development on Site 3 is in a level area of the 39.92-acre parcel and therefore does not appear to have a high probability of landslide activity affecting AHO Site 3. Notwithstanding, the soils report required by the CBC would identify the potential for landslides affecting an individual project to be located on Site 3, as well as provide specific engineering measures and structural design recommendations to resist landslides and meet appropriate minimum factors of safety identified in Section 18 of the 2010 CBC based on site specific soil conditions as appropriate.

COLLAPSE

If near-surface soils vary in composition both vertically and laterally, strong earthquake shaking can cause non-uniform compaction of the soil strata, resulting in movement of the near-surface soils. The city is located in an area considered to be of high potential for earthquake shaking

according to the Earthquake Shaking Potential Map for California. Therefore, the probability of differential compaction for all AHO sites is high. However, collapse, as stated previously, is based on soil composition. The soils report required by the CBC would identify the potential for collapse for an individual project site, as well as provide specific engineering measures and structural design recommendations to resist seismically induced soil collapse and meet appropriate minimum factors of safety indentified in Section 18 of the 2010 CBC based on site specific soil conditions as appropriate..

SUBSIDENCE

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur (and is greatly accelerated) as a result of human activities. Common causes of land subsidence from human activity include: pumping water, oil, and gas from underground reservoirs; dissolution of limestone aquifers (sinkholes); collapse of underground mines; drainage of organic soils; and initial wetting of dry soils.

Subsidence problems are common in the diked baylands of Novato because of the highly compressible nature of the existing fill. Areas susceptible to earthquake induced settlement include those areas underlain by thick layers of colluvial material or un-engineered fill. Land subsidence has occurred within the low lying areas, mainly along the Bay margins. If necessary, improvements would be required to remove the potential for collapse. None of the AHO sites are along the Bay and as such the potential for subsidence is low. The soils report required by the CBC would identify the potential for subsidence for an individual project site, as well as provide specific engineering measures and structural design recommendations to resist subsidence, and meet appropriate minimum factors of safety identified in Section 18 of the 2010 CBC based on site specific soil conditions as appropriate..

CONCLUSION

All proposed housing projects in the city are required to adhere to the 2010 California Building Code, including the seismic protection standards that address soil instability. The seismic protection standards related to buildings and foundations are contained in Chapter 18 of the CBC. The CBC requires the preparation of a site-specific soils or geotechnical report prior to the issuance of a building permit. The City also requires that soil reports be submitted with all proposed housing development tentative maps, as required by Municipal Code Section 9-15. These project-specific soil reports must be prepared by a qualified professional engineer, must meet all of the building and foundation safety requirements established in the CBC, and must identify any soil instability concerns, including risks associated with liquefaction, landslides, lateral spreading, subsidence, and soil collapse. The site-specific soils and geotechnical report must be completed prior to the approval of any tentative map or development plan for any of AHO sites identified in the Housing Element. Recommendations and requirements from the site-specific soil hazards and geotechnical reports must be incorporated into the project designs and engineering and construction plans. The implementation of the site-specific geotechnical recommendations into the future construction of any housing project in the City of Novato would reduce the potential for impacts associated with geologic soils hazards. Therefore, implementation of the Housing Element would have a **less than significant** impact relative to this topic.

Impact 3.5-4: Be located on expansive soils creating substantial risks to life or property (Less than Significant)

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to geologic hazards and soils. The discussion under Impact 3.5-1 above, identifies which Draft Housing Element programs are relevant to the analysis of geologic and soils hazards, and identifies which programs have no relevance to this environmental topic.

The Housing Element includes numerous programs supporting the development of a range of housing types and densities in Novato. While the Housing Element does not permit a specific development project, its implementation could nonetheless lead to the development of new residential units in Novato, in particular at the five identified AHO sites, resulting in construction activities on expansive soils. This is an indirect impact of adoption of the Housing Element.

Programs 9.B, and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with expansive soils.

The analysis below provides a discussion regarding the potential for geologic hazards associated with construction on expansive soils to result from the future development of the five AHO sites.

Figure 3.5-4 shows the areas in Novato considered to have expansive soils. As this figure shows, AHO Sites 2 (Landing Court) and 4 (7606 Redwood Boulevard – Olive Avenue) are in areas considered to have no potential for expansive soils, AHO Sites 1 (1787 Grant Avenue) and 5 (1905 Novato Boulevard) are in areas considered to have a low potential for expansive soils, and AHO Site 3 (Redwood Boulevard/Black John Road) is in an area with a high potential for expansive soils. According to the Geologic Conditions Map completed for the San Marin Business Park, the majority of the 4-acre area identified in the Housing Element for Site 3 is considered fill with portions of colluvium/alluvium[1] soils.

As described under the impact statements above, all proposed housing projects in the city are required to adhere to seismic protection standards, including those resulting in soil instability, listed in the 2010 California Building Code. The CBC requires the preparation of a site-specific soils

[1] Colluvium is loose earth material that has accumulated at the base of a hill, through the action of gravity, as piles of talus, avalanche debris, and sheets of detritus moved by soil creep or frost action. Alluvium is sand, silt, clay, gravel, or other matter deposited by flowing water, as in a riverbed, floodplain, delta, or alluvial fan.

or geotechnical report prior to the issuance of a building permit. The City also requires that soil reports be submitted with all proposed housing development tentative maps (Section 9-15 of the Novato Municipal Code). These project-specific soil reports must be prepared by a qualified professional engineer, and must identify any soil instability concerns, including expansive soils. The site-specific soils and geotechnical report must be completed prior to the approval of any tentative map or development plan for any of the five housing opportunity sites identified in the Housing Element. Recommendations and requirements from the site-specific soil hazards and geotechnical reports must be incorporated into the project designs and engineering and construction plans. Examples of recommendations to reduce impacts from expansive soils may include the use and placement of engineered fill material, increasing the width and depth of building foundations, or other construction techniques recommended by a professional engineer. The implementation of the site-specific geotechnical recommendations into the future construction of any housing project in the City of Novato would reduce the potential for impacts associated with expansive soils. Therefore, implementation of the Housing Element would have a **less than significant** impact relative to this topic.

Impact 3.5-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater (No Impact)

Any future housing that is constructed as a result of Housing Element implementation would be required to adhere to the wastewater treatment requirements of the City and RWQCB. The Housing Element does not propose any policies or programs that would remove these requirements.

It is the City of Novato policy to require all new development to connect to the existing wastewater service provided by the Novato Sanitary District (NSD). Novato Municipal Code 5-37 Sewage Disposal requires that all new projects connect to the City's sewer disposal system. As a result, no future housing projects developed as a result of implementation of the Housing Element would use septic tanks. Therefore, implementation of the Housing Element would have **no impact** regarding this issue.

Impact 3.5.6: Result in the loss of availability of a mineral resource of value to the region or state, or a locally-important mineral resource recovery site (No Impact)

The Novato General Plan and Marin Countywide Plan identify three areas in the city that have mineral resources. Map 3-5: Location of Mineral Resource Preservation Sites, of the Marin Countywide Plan shows the location of mineral resource sites in the county, including those in Novato. None of the potential housing sites identified in the 2007-2014 Housing Element, including the AHO sites, are located in identified mineral resource areas. Therefore, implementation of the Housing Element would have **no impact** relative to this topic.

REFERENCES

California Department of Conservation, California Geological Survey (CGS). 2003. *Earthquake Shaking Potential for California map. Spring 2003.*

City of Novato. 2007. *City of Novato General Plan – Revision October 9, 2007.* Novato, California. Resolution No. 122-07.

City of Novato. 2000. *Environmental Review Guidelines.* Novato, California. Revised April 2000.

City of Novato. 2009. *Existing Conditions Report.* Novato, California. March 25, 2009.

Marin County. 2005. *Marin Countywide Plan Geology, Mineral Resources and Hazardous Materials Technical Background Report.* November 2005.

Marin County. 2007. *Marin Countywide Plan Map 3-5 Location of Mineral Resource Preservation Sites.* Available at: http://www.co.marin.ca.us/depts/cd/main/fm/cwpdocs/Maps/Map3_5_Location_of_Mineral_Resources.pdf. Accessed: June 6, 2013.

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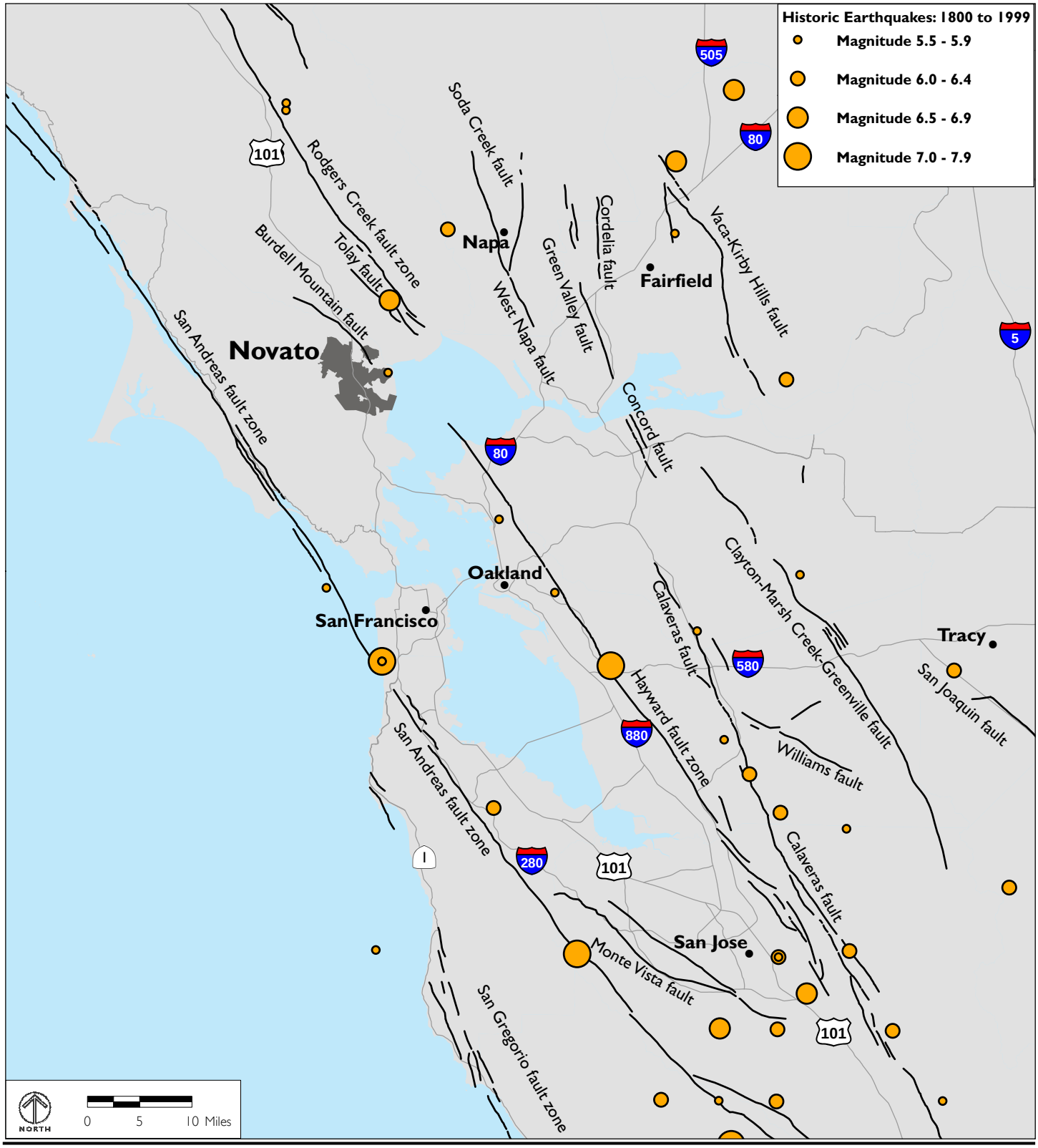
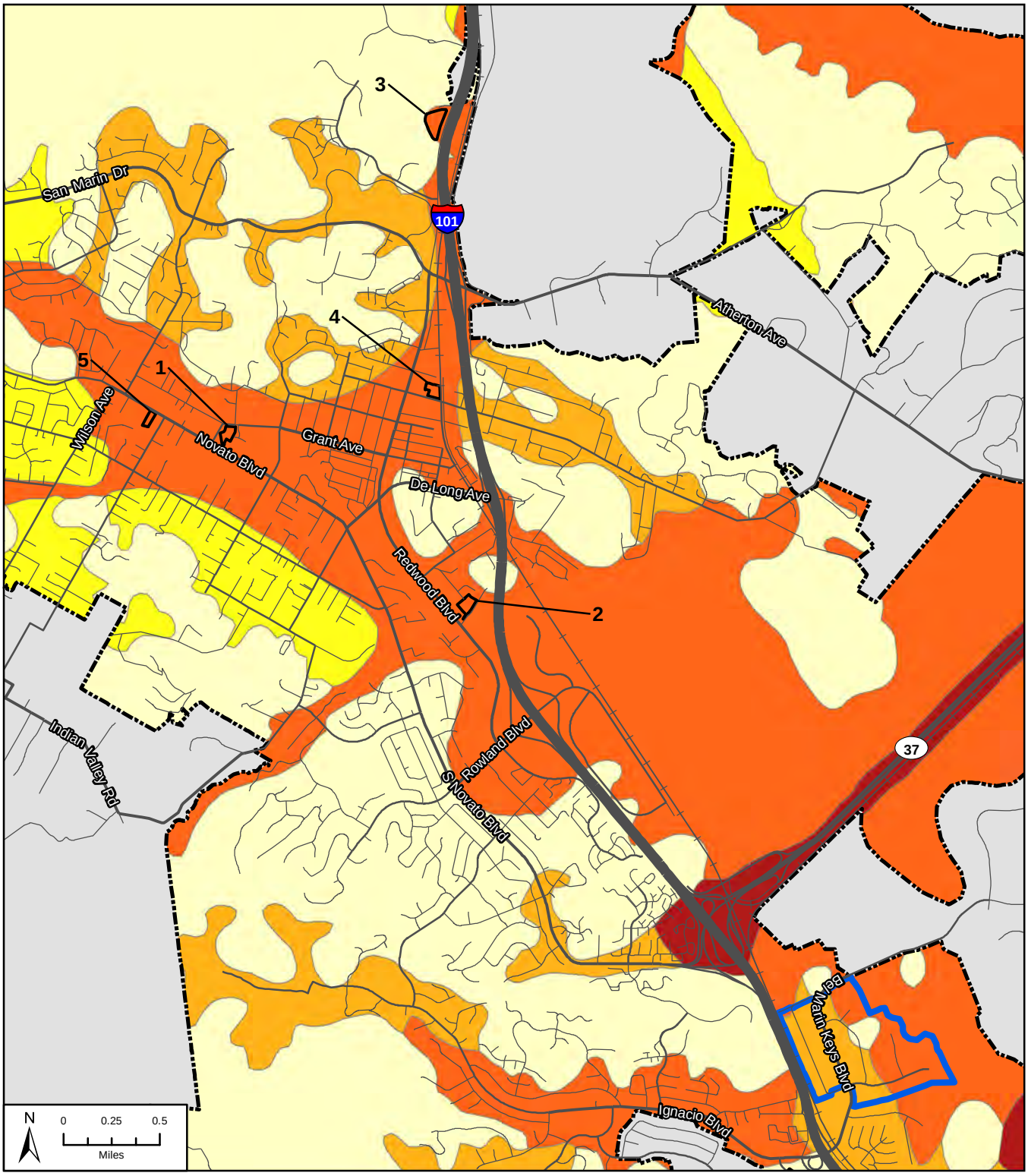


CITY OF NOVATO HOUSING ELEMENT EIR

Figure 3.5-1: Regional Faults and Historic Earthquakes

Source: City of Novato Existing Conditons Report



Liquefaction Potential

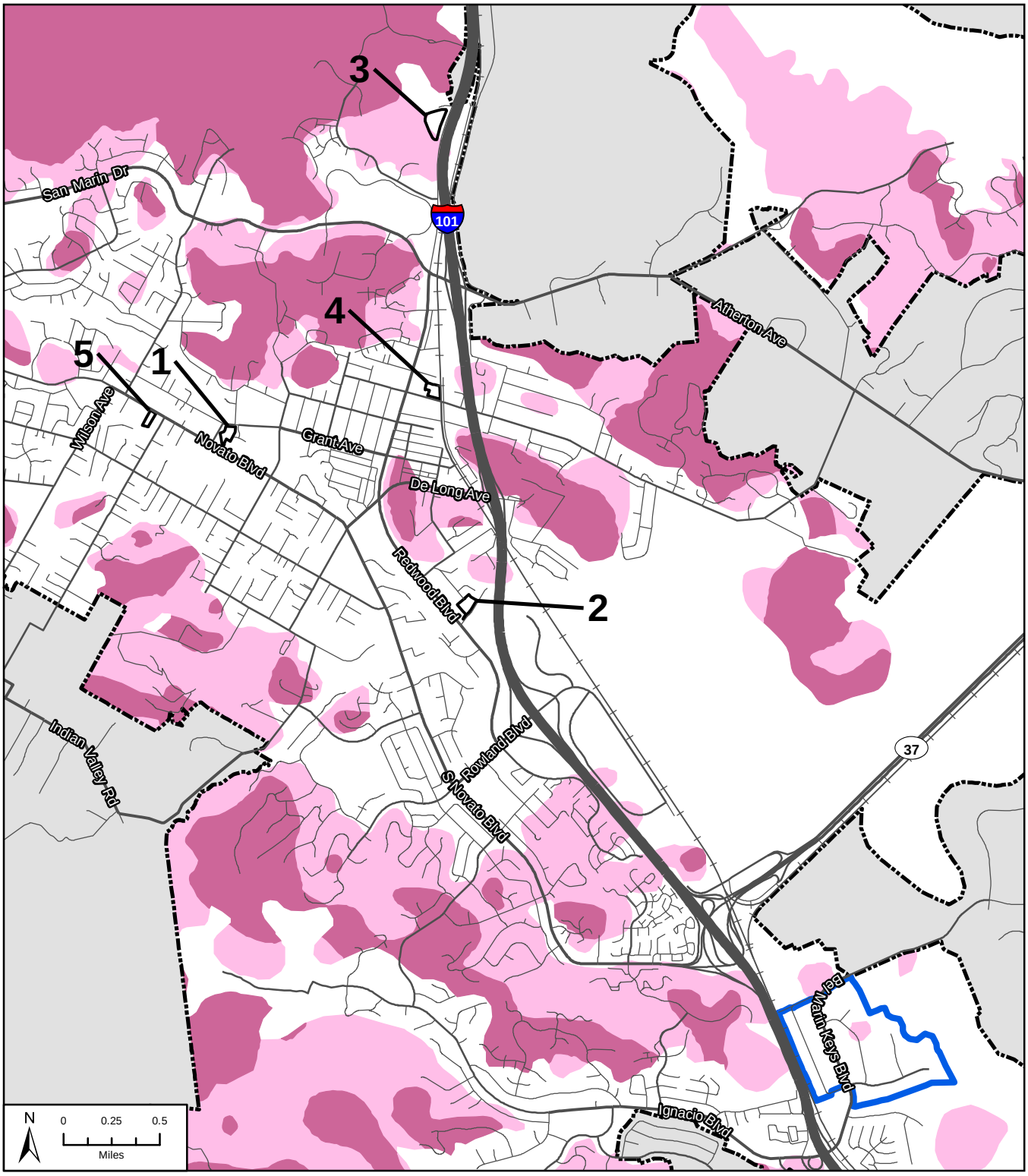
- Very High
- High
- Medium
- Low
- Very Low

- Affordable Housing Overlay Sites (1-5)
- Hamilton and Ignacio Industrial Parks
- City of Novato

CITY OF NOVATO HOUSING ELEMENT

Figure 3.5-2: Liquefaction Hazard Areas

Data sources: Marin County GIS; City of Novato GIS. Map date: June 19, 2013.



Landslide Potential

- Low
- High

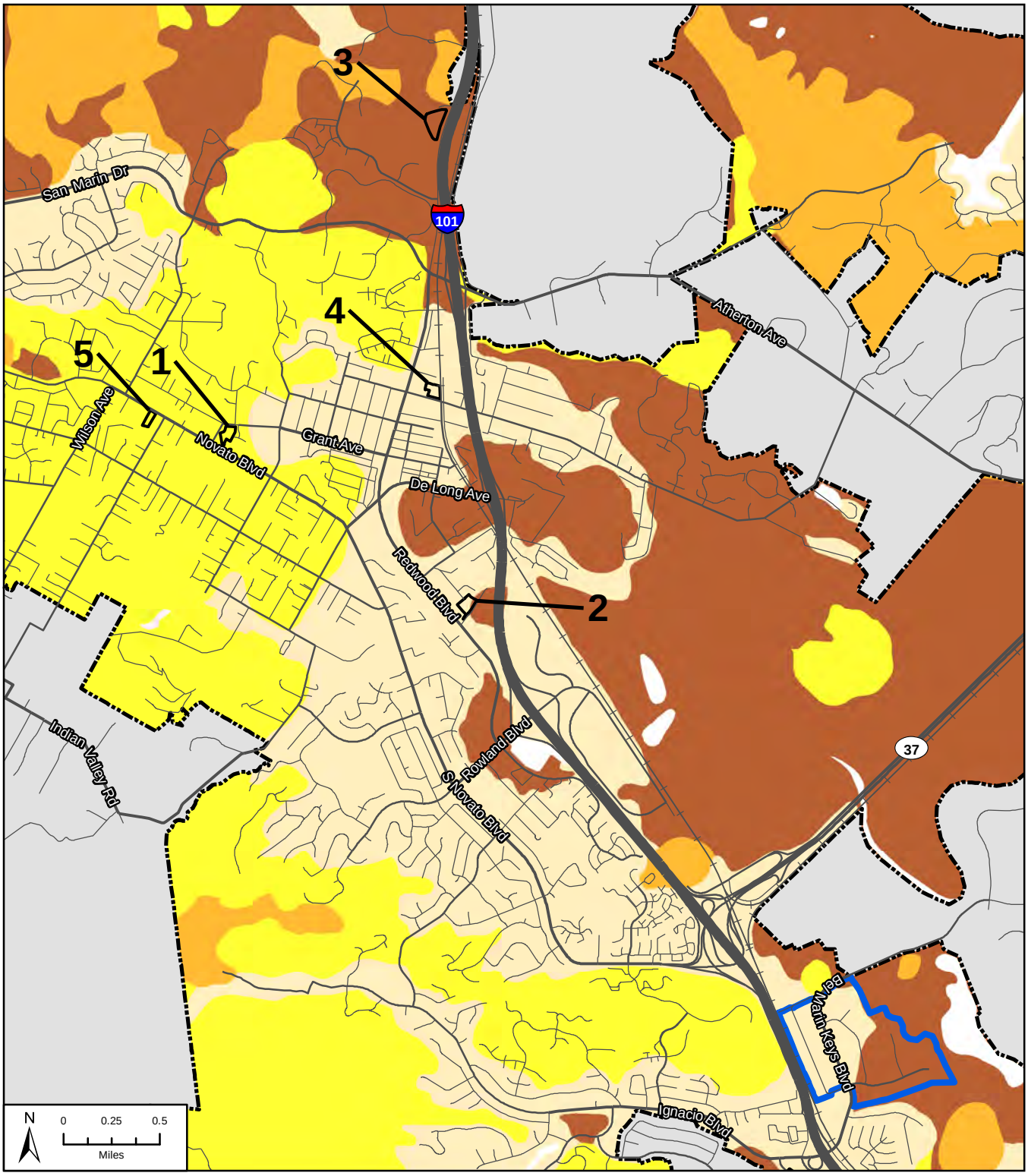
- Affordable Housing Overlay Sites (1-5)
- Hamilton and Ignacio Industrial Parks
- City of Novato

Data sources: Marin County GIS; City of Novato GIS. Map date: June 19, 2013.

CITY OF NOVATO HOUSING ELEMENT

Figure 3.5-3: Landslide Hazard Areas

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm



Potential for Expansion

- None
- Low
- Moderate
- High

- Affordable Housing Overlay Sites (1-5)
- Hamilton and Ignacio Industrial Parks
- City of Novato

CITY OF NOVATO HOUSING ELEMENT

Figure 3.5-4: Expansive Soils

Data sources: Marin County GIS; City of Novato GIS. Map date: June 19, 2013.

This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed project. This section provides a background discussion of greenhouse gases and climate change linkages and effects of global climate change. This section is organized with an existing setting, regulatory setting, approach/methodology, and impact analysis.

The analysis and discussion of the GHG and climate change impacts in this section focuses on the proposed project's consistency with local, regional, and statewide climate change planning efforts and discusses the context of these planning efforts as they relate to the proposed project.

As described in greater detail below, emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment in a cumulative context. The emissions from a single project will not cause global climate change, however, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. Therefore, the analysis of GHGs and climate change is presented in terms of the proposed project's contribution to cumulative impacts related to GHGs and climate change.

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context and process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and, therefore, significant.

3.6.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE LINKAGES

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation.

3.6 GREENHOUSE GASES AND CLIMATE CHANGE

Naturally occurring greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. Although the direct greenhouse gases CO_2, CH_4, and N_2O occur naturally in the atmosphere, human activities have changed their atmospheric concentrations. From the pre-industrial era (i.e., ending about 1750) to 2005, concentrations of these three greenhouse gases have increased globally by 36, 148, and 18 percent, respectively (IPCC 2007)[1].

Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, commercial, and agricultural sectors (California Air Resources Board, 2012)[2]. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (California Air Resources Board, 2012).

As the name implies, global climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California produced 492 million gross metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (California Energy Commission 2006a) [3]. By 2020, California is projected to produce 507 $MMTCO_2e$ per year.[4]

Carbon dioxide equivalents are a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the

1 Intergovernmental Panel on Climate Change. 2007. "Climate Change 2007: The Physical Science Basis, Summary for Policymakers."
http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

2 California Air Resources Board. 2012. "Greenhouse Gas Inventory Data, 2000-2009.
http://www.arb.ca.gov/cc/inventory/data/data.htm

3 California Energy Commission. 2006a. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. http://www.arb.ca.gov/cc/inventory/archive/archive.htm

4 California Air Resources Board. 2010. "Functional Equivalent Document prepared for the California Cap on GHG Emissions and Market-Based Compliance Mechanisms."

greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2008, accounting for 36.9% of total GHG emissions in the state (California Air Resources Board, 2012). This category was followed by the electric power sector (including both in-state and out of-state sources) (24.8%) and the industrial sector (21.1%) (California Air Resources Board, 2012).

EFFECTS OF GLOBAL CLIMATE CHANGE

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. In general, increases in the ambient global temperature as a result of increased GHGs are anticipated to result in rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

If the temperature of the ocean warms, it is anticipated that the winter snow season would be shortened. Snowpack in the Sierra Nevada provides both water supply (runoff) and storage (within the snowpack before melting), which is a major source of supply for the state. The snowpack portion of the supply could potentially decline by 70% to 90% by the end of the 21st century (California Climate Change Center (CCCC), 2006)[5]. This phenomenon could lead to significant challenges securing an adequate water supply for a growing state population. Further, the increased ocean temperature could result in increased moisture flux into the state; however, since this would likely increasingly come in the form of rain rather than snow in the high elevations, increased precipitation could lead to increased potential and severity of flood events, placing more pressure on California's levee/flood control system.

Sea level has risen approximately seven inches during the last century and it is predicted to rise an additional 22 to 35 inches by 2100, depending on the future GHG emissions levels (CCCC 2006). If this occurs, resultant effects could include increased coastal flooding, saltwater intrusion and disruption of wetlands (CCCC 2006). As the existing climate throughout California changes over time, mass migration of species, or failure of species to migrate in time to adapt to the perturbations in climate, could also result. Under the emissions scenarios of the Climate Scenarios report (CCCC 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following:

PUBLIC HEALTH

Temperatures in California are projected to rise significantly over the twenty-first century (CCCC 2006). The estimates in the magnitude of warming vary due to uncertainties in climate sensitivity, differences in modeling approaches, and differences in future emissions scenarios (CCCC 2006).

5 California Climate Change Center. 2006. Scenarios of Climate Change in California: An Overview. http://www.climatechange.ca.gov/climate_action_team/reports/

Given the range in projected emissions and temperature increases, the California Climate Change Center has presented temperature increase estimates in the low range, medium range, and high range to reflect the variations in the modeling of future conditions. Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation are projected to increase from 25% to 35% under the lower warming range and to 75% to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios report indicates that large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced.

In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100, which provides a contextual background for understanding temperature increases throughout all areas of California. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

WATER RESOURCES

A vast network of man-made reservoirs and aqueducts capture and transport water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snow pack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snow pack, increasing the risk of summer water shortages.

The state's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta, a major state fresh water supply to significant population centers throughout California, and a key water supply for much of California's agricultural economy, which provides food sources for much of the state. Global warming is also projected to seriously affect agricultural areas, with California farmers projected to lose as much as 25% of the water supply they need; decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain); and seriously harm winter tourism. Under the lower warming range, the snow dependent winter recreational season at lower elevations could be reduced by as much as one month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing, snowboarding, and other snow dependent recreational activities.

If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snow pack by as much as 70% to 90%. Under the lower warming scenario, snow pack losses are expected to be only half as

large as those expected if temperatures were to rise to the higher warming range. How much snow pack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snow pack would pose challenges to water managers, hamper hydropower generation, and nearly eliminate all skiing and other snow-related recreational activities.

AGRICULTURE

Increased GHG emissions are expected to cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. Although higher carbon dioxide levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits, and nuts.

Crop growth and development will be affected, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

FORESTS AND LANDSCAPES

Global warming is expected to alter the distribution and character of natural vegetation thereby resulting in a possible increased risk of large of wildfires. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. For example, if precipitation increases as temperatures rise, wildfires in southern California are expected to increase by approximately 30% toward the end of the century. In contrast, precipitation decreases could increase wildfires in northern California by up to 90%.

Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and sub-alpine ecosystems are expected to decline by as much as

60% to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures will increasingly threaten the state's coastal regions. Under the higher warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

ENERGY CONSUMPTION

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with the operation of passenger, public transit, and commercial vehicles results in GHG emissions that ultimately result in global climate change. Alternative fuels such as natural gas, ethanol, and electricity (unless derived from solar, wind, nuclear, or other energy sources that do not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Electricity Consumption

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 71 percent of the electrical power needed to meet California's demand is produced in the state. Approximately 29 percent of its electricity demand is imported from the Pacific Northwest and the Southwest (California Energy Commission, 2012)[6]. In 2010, California's in-state generated electricity was derived from natural gas (53.4 percent), large hydroelectric resources (14.6 percent), coal (1.7 percent), nuclear sources (15.7 percent), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (14.6 percent) (California Energy Commission, 2012).

According to the California Energy Commission (CEC), total statewide electricity consumption increased from 166,979 gigawatt-hours (GWh) in 1980 to 228,038 GWh in 1990, which is an estimated annual growth rate of 3.66 percent. The statewide electricity consumption in 1997 was 246,225 GWh, reflecting an annual growth rate of 1.14 percent between 1990 and 1997 (California Energy Commission Energy Almanac, 2012). Statewide consumption was 274,985 GWh in 2010, an annual growth rate of 0.9 percent between 1997 and 2010.

Oil

The primary energy source for the United States is oil, which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily in the last several decades. As of 2009, world consumption of oil had reached 96 million barrels per day. The United States, with approximately five percent of

6 California Energy Commission (2012). Energy Almanac. Retrieved August 2012, from http://energyalmanac.ca.gov/overview/index.html

the world's population, accounts for approximately 19 percent of world oil consumption, or approximately 18.6 million barrels per day (The World Factbook 2009, Washington, DC: Central Intelligence Agency, 2009). The transportation sector relies heavily on oil. In California, petroleum based fuels currently provide approximately 96 percent of the state's transportation energy needs (California Energy Commission, 2012).

Natural Gas

In 2010, the SACOG region consumed 529.5 million therms of natural gas. Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once it is extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers, such as PG&E, then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

The state produces approximately 12 percent of its natural gas, while obtaining 22 percent from Canada and 65 percent from the Rockies and the Southwest (California Energy Commission, 2012). In 2006, California produced 325.6 billion cubic feet of natural gas (California Energy Commission, 2012).

3.6.2 REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (FCAA) was first signed into law in 1970. In 1977, and again in 1990, the law was substantially amended. The FCAA is the foundation for a national air pollution control effort, and it is composed of the following basic elements: National ambient air quality standards (NAAQS) for criteria air pollutants, hazardous air pollutant standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The EPA is responsible for administering the FCAA. The FCAA requires the EPA to set NAAQS for several problem air pollutants based on human health and welfare criteria. Two types of NAAQS were established: primary standards, which protect public health, and secondary standards, which protect the public welfare from non-health-related adverse effects such as visibility reduction.

Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the greenhouse gas (GHG) intensity (a measurement of GHG emissions per unit of

economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. At the time of this writing, a quantification of the effectiveness of these policies at the national level is not available. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. However, as of this writing, there are no adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

STATE

Assembly Bill 1493

In response to AB 1493, CARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and 1961 (CCR 13 1961), and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. For passenger cars and light-duty trucks 3,750 pounds or less loaded vehicle weight (LVW), the 2016 GHG emission limits are approximately 37 percent lower than during the first year of the regulations in 2009. For medium-duty passenger vehicles and light-duty trucks 3,751 LVW to 8,500 pounds gross vehicle weight (GVW), GHG emissions are reduced approximately 24 percent between 2009 and 2016.

CARB requested a waiver of federal preemption of California's Greenhouse Gas Emissions Standards. The intent of the waiver is to allow California to enact emissions standards to reduce carbon dioxide and other greenhouse gas emissions from automobiles in accordance with the regulation amendments to the CCRs that fulfill the requirements of AB 1493. The EPA granted a waiver to California to implement its greenhouse gas emissions standards for cars.

Assembly Bill 1007

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

California Executive Orders S-3-05 and S-20-06, and Assembly Bill 32

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the year 2020 and 3) 80% below the 1990 levels by the year 2050.

In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Assembly Bill 32- Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 million metric tons (MMT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10 percent, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

California Strategy to Reduce Petroleum Dependence (AB 2076)

In response to the requirements of AB 2076 (Chapter 936, Statutes of 2000), the CEC and the CARB developed a strategy to reduce petroleum dependence in California. The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard is incorporated into the State Alternative Fuels Plan and

is one of the proposed discrete early action GHG reduction measures identified by CARB pursuant to AB 32.

Senate Bill 97 (SB 97)

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) was built on AB 32 (California's 2006 climate change law). SB 375's core provision is a requirement for regional transportation agencies to develop a Sustainable Communities Strategy (SCS) in order to reduce GHG emissions from passenger vehicles. The SCS is one component of the existing Regional Transportation Plan (RTP).

On July 18, 2013 the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) adopted Plan Bay Area an integrated transportation and land-use strategy through 2040 that marks the nine-county region's first long-range plan to meet the requirements of Senate Bill 375, which calls on each of the state's 18 metropolitan areas to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. Working in collaboration with cities and counties, the Plan advances initiatives to expand housing and transportation choices, create healthier communities, and build a stronger regional economy.

Additionally, SB 375 modified the state's Housing Element Law to achieve consistency between the land use pattern outlined in the SCS and the Regional Housing Needs Assessment allocation. The legislation also substantially improved cities' and counties' accountability for carrying out their housing element plans.

LOCAL

Novato Climate Change Action Plan

The City of Novato adopted the Novato Climate Change Action Plan in December 2009. The Climate Change Action Plan (CCAP) is the City's first such plan that compiles all existing and potential activities to address climate change. The CCAP is a culmination of an array of all related sustainability initiatives taken by the City to date and provides a coordinated strategy and direction for all related efforts that follow. The Plan essentially functions as the climate change cornerstone for the City, achieved through goals and measures that will direct all future efforts to decrease greenhouse gas emissions and prepare for the impacts of climate change. The CCAP also ensures that the City's future activities and development patterns conform to California climate change legislation.

Primary past efforts taken within the City that have directly shaped the CCAP include numerous meetings, projects, and workshops of the Sustainability Committee, City staff, the community, businesses, and private organizations from April 2008 through November 2009. Other local initiatives that shaped the Plan include local green building ordinances, existing regulations requiring sustainable development standards, and existing City practices and accomplishments such as green procurement policies and upgrades of all traffic signals to more energy-efficient models.

The City conducted a greenhouse gas (GHG) inventory for municipal and community-wide sources for the baseline year of 2005. The inventory established a baseline against which future changes in emissions can be measured and provides an understanding of the sources of GHG emissions and the best strategies for emissions reductions.

Using data in the 2005 inventory, the City forecast emissions in 2020 and 2035, estimating a "business-as-usual" scenario if no actions are taken to address current energy consumption trends. The City compared the business-as-usual scenario with state emissions reduction goals. On April 14, 2009, the Novato City Council adopted an emissions reduction target of 15% below 2005 levels by 2020, which is consistent with the State's direction to local governments in the Assembly Bill (AB) 32 Scoping Plan. The City Council directed staff to develop the Climate Change Action Plan to achieve or exceed this target. During preparation of this Plan, the team established a target for 2035 consistent with the Governor's Executive Order S-3-05 to achieve an 80% statewide reduction by 2050.

Achievement of the reductions established in the CCAP requires timely implementation complemented with the initiative of each resident, employee, and business of Novato. This coordinated and comprehensive approach will help the City protect the earth and the local community for generations to come and ensure that Novato is positioned to excel in spite of anticipated challenges resulting from climate change.

Green Building Standards

On September 14, 2010, the Novato City Council adopted Ordinance 1553 and Ordinance 1554, which revised Sections 4-13 and 4-16 of the Novato Municipal Code. The purpose of these Sections is to enhance the public welfare and assure that further residential development is consistent with the city's desire to create a more sustainable community by incorporating green building measures into the design, construction and maintenance of buildings. The green building practices referenced in these Sections are designed to achieve the following goals:

A. Encourage resource conservation;

B. Reduce the waste generated by construction projects;

C. Increase energy efficiency; and

D. Promote the health and productivity of residents, workers, and visitors to the city.

The City adopted and requires compliance with the GreenPoint Rated Checklist, which was developed by the Build it Green Organization. The GreenPoint Rated Checklist includes specific building techniques, materials, and performance standards that must be implemented by all new residential projects, including multi-family projects, developed in the City of Novato.

3.6.3 IMPACTS AND MITIGATION MEASURES

GHG THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

Analysis Approach

The California Office of Planning and Research (OPR) recommends that lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with construction activities, stationary sources, vehicular traffic, and energy consumption: to determine whether the impacts have the potential to result in a significant project or cumulative environmental impact; and, where feasible mitigation is available, to mitigate any project or cumulative impact determined to be potentially significant. More recently, OPR prepared amendments to the State CEQA Guidelines, pursuant to SB 97 (Statutes of 2007) for adoption by the California Natural Resources Agency. The amendments added several provisions reinforcing the requirements to assess a project's GHG emissions as a contribution to the cumulative impact of climate change. The amendments went into effect on March 18, 2010.

Specifically, CEQA Guidelines Section 15064.4, as amended March 18, 2010, states:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

> *(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*
>
> *(2) Rely on a qualitative analysis or performance based standards.*

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

> *(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

THRESHOLDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, climate change-related impacts are considered significant if implementation of the proposed project under consideration would do any of the following:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

In order to determine whether or not the proposed project would generate GHG emissions that may have a significant impact on the environment, this EIR relies on the project's consistency with the GHG reduction goals established by AB 32 and the project's consistency with the adopted Green Building Requirements contained in Sections 4-13 and 4-16 of the Novato Municipal Code.

The City's Climate Action Plan (CCAP) was developed by the City in order for future development projects and City actions to be consistent with – or better than - the statewide GHG reductions goals outlined in AB 32. As described in Table ES-1 in the 2009 Novato CCAP, implementation of the CCAP would achieve a 26.26 percent reduction of GHG emissions from 2005 levels by 2020, and a 43.46 percent reduction of GHG emissions from 2005 levels by 2035. These reduction levels exceed the reduction thresholds established by AB 32.

GHG IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Generate GHGs, either directly or indirectly, that may have a significant effect on the environment (Less than Significant)

As shown in Table 2.0-1 in the Project Description, the Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to greenhouse gases. For example, HO Program 1.A calls for public outreach efforts to expand the public's understanding of the Housing Element and available programs and opportunities within

the Housing Element. HO Program 2.A requires the inclusion of non-discrimination clauses in rental housing and deed-restricted housing constructed with City assistance. While these types of implementation programs are critical to the success of the Draft Housing Element, they would not result in any physical changes to the environment, and as such, have no potential to result in impacts related to greenhouse gases and climate change.

There are, however, a number of Draft Housing Element Policies and Programs that may have beneficial impacts in terms of GHGs and climate change. For example, HO Policy 4.2 promotes the use of sustainable and/or renewable materials and energy technologies (such as solar and wind) in new and rehabilitated housing when possible. HO Program 4.A promotes design standards relating to solar orientation, including lot layout for subdivisions, location and orientation of new structures, and landscaping. HO Program 4.B calls for the consistent implementation of the City's adopted Green Building Program to encourage the use of green building materials and energy conservation. HO Program 5.C calls for the Community Development Department staff to coordinate with government and businesses, e.g., Energy Upgrade California, the Marin Housing Authority and PG&E, procure funding (grants and/or loans), and identify participating contractors and qualifying energy upgrades for eligible owner and renter households. Program resources and contact information will be added to the City's website. HO Program 6.C calls for the consideration of zoning ordinance amendments which provide incentives for transit-oriented development where specified criteria are met. Transit-oriented development projects can assist in reducing GHGs by increasing transit ridership, which reduces vehicle miles travelled.

Programs 9.B, and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with the generation of GHG emissions. The analysis below provides a discussion regarding the potential for GHG emissions increases to result from the future development of the five AHO sites.

In order to determine if the proposed project would generate GHGs that may have a significant effect on the environment, the City of Novato has relied on the proposed project's consistency with previously adopted plans and programs aimed at reducing GHG levels both locally and regionally. In California, the primary legislation related to statewide GHG reduction targets is AB 32, which calls for reducing statewide GHG emissions to 1990 levels by 2020. The Novato CCAP establishes a reduction target of 15 percent GHG reductions from 2005 levels by 2020, which is comparable to, and consistent with, the goals established by AB 32.

The General Plan has a projection at buildout of 26,509 dwelling units based on the land use inventory. There are currently 21,158 dwelling units in Novato. The Housing Element has identified sites for an estimated 416 new dwelling units, not including the five AHO sites. With the development of the five AHO sites, the Housing Element would result in a development potential of between 646 and 789 new dwelling units. This development potential is well within the General Plan buildout projections, which were the basis of the business-as-usual projections for GHG emissions contained in the 2009 Novato CCAP.

The future development potential of the five AHO sites is analyzed for three different scenarios. Scenario 1 considers the development of multifamily housing at up to 23 dwelling units per acre, as provided by Program 9.B. Scenario 2 considers the maximum amount of development that could occur with the application of the maximum possible density bonus pursuant to state law. Scenario 3 considers the maximum amount of development that could result from senior housing project qualifying for a state density bonus and the local senior housing bonus offered by Program 9.E.

Each of the three development scenarios for the AHO sites described in Chapter 2.0, Project Description, would result in a different number of units and would have different trip characteristics. The expected trip generation potential for each of the three scenarios is indicated in Tables 3.13-10 through 3.13-12.

While development of each site with senior housing as assumed in Scenario 3 would result in more units than Scenario 2, senior housing generates substantially fewer vehicle trips than traditional multi-family housing. Even with the higher number of units, the total trip generation at each site with senior housing results in approximately 35 percent fewer daily trips when compared to Scenario 2. Vehicle trips, and more specifically, the emissions generated by vehicle trips, accounts for the vast majority of GHGs generated by the future development of the AHO sites. As a result, for the purposes of the GHG analysis, Scenario 2 was assumed to represent a "worst case" condition between the two density bonus scenarios in terms of GHG emissions, and no separate analysis was performed for Scenario 3.

The California Emission Estimator Model (CalEEMod)^{TM} (v.2011.1.14) was used to estimate project-level operational GHG emissions for Scenarios 1 and 2. GHG emissions generated by operation of the five AHO sites would consist primarily of CO_2 emissions, with very limited quantities of methane (CH_4) also generated. Carbon dioxide equivalents (CO_2e) provide a universal standard of measurement against which the impacts of releasing (or avoiding the release of) different greenhouse gases can be evaluated. Every greenhouse gas has a Global Warming Potential (GWP), a measurement of the impact that particular gas has on 'radiative forcing'; that is, the additional heat/energy which is retained in the Earth's ecosystem through the addition of this gas to the atmosphere.

Table 3.6-1 shows the CO_2e emissions, which include mobile source, area source, and energy emissions that would result from operations of each of the two scenarios. The full calculations, inputs, and assumptions are provided in Appendix C. CO_2e emissions are presented prior to the implementation of the air quality emissions reductions measures contained in Section 3.2 of this EIR, and following implementation of the mitigation measures in Section 3.2.

TABLE 3.6-1: AFFORDABLE HOUSING OPPORTUNITY SITES GHG EMISSIONS

	AFFORDABLE HOUSING UNITS	*POPULATION*	*UNMITIGATED CO2E (TONS/YEAR)*	*MITIGATED CO2E (TONS/YEAR)*
Scenario 1 Multifamily only	230	581[1]	2,308.72	1,984.83
Scenario 2 Multifamily + Density Bonus	312	789[1]	3,131.82	2,692.47

SOURCES: CALEEMOD (V.2011.1.1)

Notes: 1) Based on 2.53 persons per unit.

Table ES-1 in the 2009 Novato CCAP shows that under 2020 development conditions, the city is projected to generate net GHG emissions of 343,535 tons per year, which is a 26.26 percent reduction from the 2005 baseline of 465,892 tons per year. Following the implementation of the mitigation measures identified in Section 3.2, Scenario 2 may generate up to 2,692 tons per year of GHGs. The addition of these GHG emissions generated under Scenario 2 (which has the highest GHG emissions potential of the two AHO density bonus development scenarios) would result in net GHG emissions in 2020 of 346,227 tons per year, which is a 25.68 percent reduction from the 2005 baseline of 465,892 tons per year of GHG emissions.

Implementation of the Housing Element may indirectly lead to the development of the five AHO sites. Development of the five AHO sites may result in maximum operational GHG emissions of 2,692 tons per year of GHGs. The additional GHG emissions generated by development of the five AHO sites would not represent a significant increase in GHG emissions, as the City would still be expected to achieve a 25.68 percent reduction in GHG emissions by 2020, which greatly exceeds the City's adopted reduction target of a 15 percent reduction in GHG emissions, and the goals of AB 32, which call for a 15 percent reduction by 2020. Therefore, this impact is **less than significant** and no mitigation is required.

Impact 3.6-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (Less than Significant)

The City implements two primary regulatory vehicles in order to reduce GHG emissions in the city from existing and future sources. The 2009 Novato CCAP includes a comprehensive approach that the City is currently implementing, which would achieve and exceed the adopted GHG reduction targets of 15 percent below 2005 levels by 2020. Additionally Section 4-13 and 4-16 of the Novato Municipal Code require the implementation of Green Building Standards in all new residential construction in the city.

Any future development that may occur following adoption of the Housing Element, including the development of an emergency shelter or development of the five AHO sites would be required to implement the City's adopted Green Building Standards, and must not conflict with the applicable measures from the 2009 CCAP.

The 2009 CCAP includes a wide range of measures, many of which are applicable to future development that may occur under the Housing Element. The applicable measures include:

Measure 4: Low-Income Households Programs: Expand and better integrate programs for low-income households such as the distribution of CFL lights and water-conserving showerheads.

Measure 5: Public Outreach: Promote residential and commercial energy efficiency and conservation through energy bill inserts, public service announcements, recognition programs, and other forms of public outreach.

Measure 8: Green Building Standards: Continue to implement the City's Green Building Program. Expand program to require a minimum of 15% above California's Title 24 energy standards, as amended.

Measure 9: Cool Paving Materials: Require the use of high albedo material for future outdoor surfaces such as parking lots, median barriers, roadway improvements, and sidewalks in order to reduce the urban heat island effect and save energy.

Measure 10: Increase Tree Cover: Increase tree cover of structures and other improvements in the City through implementation of the City's Urban Forestry Plan, including updated landscaping requirements to ensure strategic placement of plantings to shade east and west walls of structures.

Measure 17: Require mixed-use, infill development at higher densities to ensure the provision of a mix of housing, employment, and commercial services within the community.

Measure 19: Affordable Housing: Continue support of affordable housing ordinance and programs.

Measure 20: Pedestrian Convenience: Promote walking through design standards and amenities that concentrate uses, reduce the need for vehicular travel, and enhance the pedestrian experience.

Measure 22: Multi-Family Bicycle Parking: Increase bicycle-parking requirements for new multi-family residential construction. Short-term facilities shall be provided at a minimum rate equal to 10% of vehicle spaces. Long-term facilities shall be provided at a ratio of one long-term bicycle parking space for every unit. Long-term facilities shall consist of one of the following: a bicycle locker, a locked room with standard racks and access limited to bicyclists only, a standard rack in a location that is protected from the elements and monitored by video surveillance 24 hours per day. Alternatively, spaces may be provided in designated space within the units' garage/carport.

Measure 24: Parking Standards: Revise parking standards to disincentivize single-occupant vehicles and promote non-vehicular travel for developments in commercial, multi-unit residential, or mixed-use developments near transit. Account for design elements that promote non-vehicular travel such as proximity to transit, proximity to employment centers, bicycle facilities, and location near transit.

There are a number of Draft Housing Element Policies and Programs that directly support, and assist with the implementation of the CCAP measures listed above. For example, HO Program 4.B

calls for the consistent implementation of the City's adopted Green Building Program to encourage the use of green building materials and energy conservation, which is consistent with CCAP Measure 8. HO Program 5.C calls for the Community Development Department staff to coordinate with government and businesses, e.g., Energy Upgrade California, the Marin Housing Authority and PG&E, procure funding (grants and/or loans), and identify participating contractors and qualifying energy upgrades for eligible owner and renter households, which is consistent with CCAP Measures 4 and 5. HO Program 6.C calls for the consideration of zoning ordinance amendments which provide incentives for transit-oriented development where specified criteria are met, which is consistent with CCAP Measure 24. Overall, the Draft Housing Element is consistent with the goals and priorities established in the CCAP. Implementation of the Draft Housing Element would not hinder the City's ability to fully implement the CCAP, nor would it interfere with the City's achievement of the GHG emissions reductions that are projected with full implementation of the CCAP. As stated under Impact 3.6-1, implementation of the CCAP would assist the City in meeting the GHG emissions reduction established by AB 32.

In addition to the proposed project's consistency with the CCAP and AB 32, new projects are required to fully implement the City's Green Building Standards. Compliance with the City's Green Building Standards would reduce GHG emissions from future development to the greatest extent feasible, and would further ensure that the Housing Element and any future development following adoption of the Housing Element would be consistent with all applicable plans and policies adopted for the purpose of reducing GHG emissions. This is a **less than significant** impact.

The purpose of this section is to disclose and analyze the potential impacts associated with hazards and hazardous materials. This section is based in part on the following technical studies: *EnviroStor Website* (DTSC 2013), *GeoTracker* (SWRCB 2013), *City of Novato General Plan – Revision October 9, 2007* (City of Novato 2007), *Existing Conditions Report* (City of Novato 2009), *Environmental Review Guidelines* (City of Novato 2000), Novato Municipal Code, *Gnoss Field Airport Proposed Extension Of Runway 13/31 Draft Environmental Impact Report* (Marin County. 2011), *1989 Airport Master Plan (Updated 1997)* (Marin County 1997), *Wildland-Urban Interface Zone map* (NFPD 2013), and the PG&E Natural Gas System website (PG&E. 2013).

Comments received regarding hazards were received during the NOP comment period. These comments include:

- Concerns with development on sites with main gas pipeline running through the parcels. Stated that a gas line in Novato was recently documented by PG&E as one of the top 100 riskiest pipelines in the Country. Also noted that US. Dept of Transportation's Pipeline Safety & Hazardous Materials Safety Administration requires that property developers/owners need to be aware of pipeline locations and make risk-informed decisions about their development and land use plans. This involves gathering available and necessary information about the pipeline and consulting with the pipeline operator (PG&E) before changing the land use as early in the development process as possible.

3.7.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS

Hazardous Materials Defined

For the purposes of this EIR, "hazardous material" is defined as provided in California Health & Safety Code, Section 25501:

- Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

"Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

"Hazardous waste" is a subset of hazardous materials. For the purposes of this EIR, the definition of hazardous waste is essentially the same as that in the California Health & Safety Code, Section 25517, and in the California Code of Regulations (CCR), Title 22, Section 66261.2:

- Hazardous wastes are wastes that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious illness, or pose a substantial present or

potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

CCR Title 22 categorizes hazardous waste into hazard classes according to specific characteristics of ignitibility, corrosivity, reactivity, or toxicity. Hazardous waste with any of these characteristics is also known as a Resource Conservation and Recovery Act (RCRA) waste.

Hazardous materials can be categorized as hazardous non-radioactive chemical materials, radioactive materials, toxic materials, and biohazardous materials. The previous definitions are adequate for non-radioactive hazardous chemicals. Radioactive and biohazardous materials are further defined as follows:

- Radioactive materials contain atoms with unstable nuclei that spontaneously emit ionizing radiation to increase their stability.
- Radioactive wastes are radioactive materials that are discarded (including wastes in storage) or abandoned.
- Toxic wastes are harmful or fatal when ingested or absorbed (e.g., containing mercury, lead). When toxic wastes are land disposed, contaminated liquid may leach from the waste and pollute groundwater.
- Biohazardous materials include materials containing certain infectious agents (microorganisms, bacteria, molds, parasites, and viruses) that cause or significantly contribute to increased human mortality or organisms capable of being communicated by invading and multiplying in body tissues.
- Medical wastes include both biohazardous wastes (byproducts of biohazardous materials) and sharps (devices capable of cutting or piercing, such as hypodermic needles, razor blades, and broken glass) resulting from the diagnosis, treatment, or immunization of human beings, or research pertaining to these activities.

Transportation of Hazardous Materials

The transportation of hazardous materials within the City of Novato is subject to various federal, state, and local regulations. The following provisions are included in the California Vehicle Code (CVC) and pertain to the transportation of hazardous related materials.

- The Highway Patrol designates the routes in California which are to be used for the transportation of explosives. (Section 31616)
- The CVC applies when the explosives are transported as a delivery service for hire or in quantities in excess of 1,000 pounds. The transportation of explosives in quantities of 1,000 pounds or less, or other than on a public highway, is subject to the California Health and Safety Code. (Section 31601(a))
- It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery of, or the loading of, such materials. (Section 31602(b) and Section 32104(a))

- When transporting explosives through or into a city for which a route has not been designated by the Highway Patrol, drivers must follow routes as may be prescribed or established by local authorities. (Section 31614(a))

- Inhalation hazards and poison gases are subject to additional safeguards. These materials are highly toxic, spread rapidly, and require rapid and widespread evacuation if there is loss of containment or a fire. The Highway Patrol designates through routes to be used for the transportation of inhalation hazards. It may also designate separate through routes for the transportation of inhalation hazards composed of any chemical rocket propellant. (Section 32100 and Section 32102(b))

In addition to area roadways, hazardous materials are routinely transported on existing railroad facilities that pass through the City of Novato. The North Coast Railroad Authority (NCRA) has tracks within the existing city limits located east of Hwy 101.

SITE CHARACTERISTICS

Regional and Local Groundwater

Hamilton Air Force Base has historic contamination associated with the past uses of the property by the federal government. In 1992 and 1996, the Navy discovered major contamination from leaking underground fuel storage tanks associated with two former gas stations on the property. The contamination included a methyl tertiary-butyl ether (MTBE) and benzene, toluene, ethylbenzene, and xylene (BTEX) plume; these plumes have merged and are addressed under one site designation labeled, Former Underground Storage Tank Site 957/970. Starting in June 1998, a series of biosparging and soil vapor extraction (SVE) efforts have occurred to reduce the gasoline constituent mass and to reduce elevated groundwater concentrations of MTBE. After the biosparging treatment system was shutdown in April 2010, monitoring showed that while MTBE concentrations are stable to decreasing throughout a majority of the plume, increasing concentrations were observed in a few monitoring wells at the plume's leading edge. Subsequent corrective work plans identified air sparging and monitored natural attenuation with a phytoremediation contingency as the most effective method to stabilize and decrease MTBE plume. Groundwater and surface water monitoring continues to be conducted, as described in the *Annual Site Status Report for the Year 2010, UST Site 957/970* prepared by Battelle for the U.S. Department of the Navy Base Realignment and Closure Program in 2011 to document the location of the plume and concentration of contaminants (Battelle 2011).

The maximum detected MTBE groundwater concentration associated with the plume is within Landfill 26; the cancer risk for the dermal contact pathway and for inhalation of MTBE is below the risk management range indicating that there are no health concerns for this receptor. The noncancer hazard is less than one, indicating that there are no expected adverse noncancer health effects for the construction work during trenching activities (DTSC 2013). The current maximum MTBE concentration under the Hamilton Meadows housing development is 0.073 milligrams/liter; properties in the vicinity showed negligible cancer risk, including risks associated with homegrown produce, using the CalTox^{TM} Model (DTSC 2013).

Hazardous Material Sites

The State of California Hazardous Waste and Substances Site List (also known as the "Cortese List") is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements for providing information about the location of hazardous materials sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to annually update the Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for preparing a portion of the information that comprises the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information that is part of the complete list. The CAL-SITES Abandoned Site Program Information System (ASPIS) Database is compiled by Cal-EPA to identify and track potential hazardous waste sites. GeoTracker is a geographic information system (GIS) that provides online access to environmental data and is the interface to the Geographic Environmental Information Management System (GEIMS), a data warehouse which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Searches of the above resources and records identified 45 hazardous material sites in the vicinity of Novato known to handle and store hazardous materials and are associated with a hazardous material related release or occurrence. The terms "release" or "occurrence" include any means by which a substance could harm the environment: by spilling, leaking, discharging, dumping, injecting, or escaping.

GeoTracker lists 25 sites as shown in Table 3.7-1. This table displays the known hazardous material sites in Novato with a description of the hazards provided. On the majority of these sites, cleanup has been completed and the case is closed.

TABLE 3.7-1: GEOTRACKER KNOWN HAZARDOUS MATERIAL RELEASE SITES IN THE CITY OF NOVATO

SITE NAME	*SITE TYPE*	*CLEANUP STATUS*	*ADDRESS*
790 De Long Avenue Property	LUST	Completed - Case Closed - Land Use Restrictions	790 De Long Avenue
A & A Gas Station	LUST	Completed - Case Closed	7474 Redwood Blvd
Big 4 Rents Inc	LUST	Completed - Case Closed	875 Olive Ave
Former Grand Auto	Other	Completed - Case Closed	7427 Redwood Blvd
Former Pini Hardware	LUST	Completed - Case Closed	1107 Grant Avenue
George Roth 1991 Trust	Other	Open - Inactive	879 Sweetser Avenue
Golden Gate Business Park	DTSC	No Further Action	Franklin Avenue -Next To Nw Pacific RR
GTE Diablo	Other	Completed - Case Closed	911 Diablo Ave
GTE Novato Plant Yard	LUST	Completed - Case Closed	501 Davidson St
H & J Tire	LUST	Completed - Case Closed	7426 Redwood Blvd
Mobil Unocal	LUST	Completed - Case Closed	975 Diablo Ave
Norge Laundry/Holiday Cleaners	Other	Completed - Case Closed - Land Use Restrictions	936-938 Diablo Ave
Novato Bus Facility	LUST	Open - Site Assessment	801 Golden Gate Pl
Novato Fire Station #1	LUST	Completed - Case Closed	1000 Grant Ave
Novato Lumber	LUST	Completed - Case Closed	7586 Redwood Blvd
Novato Sanitary District	LUST	Completed - Case Closed	Unknown Hwy 37
Novato Unified School District	LUST	Open - Site Assessment	819 Olive St
*NW Pacific RR Passenger & Freight Depot, Novato	DTSC	Inactive - Needs Evaluation*	Railroad Avenue At Grant Street
PG & E	LUST	Completed - Case Closed	8161 Old Redwood Hwy

SITE NAME	SITE TYPE	CLEANUP STATUS	ADDRESS
Redwood Landfill	Land Disposal Site	Open	Highway 101 North
Richfield Service Station	LUST	Completed - Case Closed	950 Diablo Ave
Shell	LUST	Open - Eligible For Closure	7300 Redwood Blvd
Shell Station	LUST	Completed - Case Closed	7473 Redwood Blvd.
Unocal	LUST	Open - Remediation	7455 Redwood Blvd
Unocal	LUST	Completed - Case Closed	1701 Grant Ave

** THE CITY OF NOVATO RECENTLY EVALUATED THIS SITE (PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT) AND THERE WAS NO RECOGNIZED ENVIRONMENTAL CONDITIONS NOTED TO BE PRESENT (PERSONAL COMMUNICATIONS STEPHEN MARSHALL, CITY OF NOVATO JULY 2013)*

NOTE: LUST = LEAKING UNDERGROUND STORAGE TANK, DTSC = CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

SOURCE: SWRCB, GEOTRACKER, 2013

DTSC's Brownfields and Environmental Restoration Program (Cleanup Program) EnviroStor database provides DTSC's component of Cortese List data by identifying Annual Workplan (now referred to State Response and/or Federal Superfund), and Backlog sites listed under Health and Safety Code section 25356. In addition, DTSC's Cortese List includes Certified with Operation and Maintenance sites. What follows is the DTSC Cleanup Program information that is required to be included in DTSC's component of the Cortese List. Table 3.7-2 contains those sites list by DSTC which are not listed in GeoTracker (see Table 3.7-1).

TABLE 3.7-2: ENVIROSTOR KNOWN HAZARDOUS MATERIAL RELEASE SITES IN THE CITY OF NOVATO

SITE NAME	CLEANUP STATUS	SITE TYPE	ADDRESS
Black Point Communications Facility Annex (J09ca0075)	Inactive - Action Required	State Response	Stonetree Lane
Costco Wholesale #141, Novato	Inactive - Needs Evaluation	Tiered Permit	300 Vintage Way
Dept. Of Defense Housing Facility - Hamilton Square	Inactive - Action Required	Military Evaluation	Highway 101 3 Mi N Of Lucas Valley Road
Hamilton AAF - (J09ca7062) - North Antenna Field - IR/MMRP	Active	State Response	Highway 101; 3 Mi N Of Lucas Valley Road
Hamilton AAF- BRAC	Certified O&M - Land Use Restrictions Only	State Response	Highway 101; 3 Mi N Of Lucas Valley Road
Hamilton AAF	Inactive - Needs Evaluation	Military Evaluation	-
Hamilton AAF (J09ca7062) (GSA Phase Ii_Lf26) IR	Active	State Response	Highway 101; 3 Mi N Of Lucas Valley Road
Hamilton AAF - WAF Hill (J09ca7085)	No Further Action	Military Evaluation	-
Hamilton AAF - Ammo Hill (J09ca7084)	No Further Action	Military Evaluation	-
Hamilton GSA Lot 7	Certified / Operation & Maintenance	State Response	Highway 101; 3 Mi N Of Lucas Valley Road
Hamilton GSA Phase I	Certified	State Response	Highway 101; 3 Mi N Of Lucas Valley Road
Hamilton - Phase II, Contract	Inactive - Needs Evaluation	Military Evaluation	-
Hamilton-Phase II, In-House (J09ca7082)	Inactive - Needs Evaluation	Military Evaluation	-

SITE NAME	*CLEANUP STATUS*	*SITE TYPE*	*ADDRESS*
Hamilton School Site	Active	School Cleanup	State Access Road/C Street
Novato Charter School	No Action Required	School Investigation	C Street/Main Gate Road
Novato DOD Housing	Active	State Response	Highway 101 3 Mi N Of Lucas Valley Road
Novato Storage Park	No Further Action	Voluntary Cleanup	Airport And Binford Roads
Omniglow Corporation	No Further Action	Voluntary Cleanup	20-C Pimentel Court
Raf Vill Fam Hous Annex	No Further Action	Military Evaluation	-

SOURCE: DTSC ENVIROSTOR 2013

Natural Gas Pipelines

As with most communities in the U.S., natural gas lines run throughout the community to provide natural gas to homes and businesses. The natural gas pipeline system is made up of gas wells, processing plants, compressor stations, gas storage facilities, transmission lines, regulator stations, safety valve monitors and distributions lines (PG&E 2013).

Federal law requires that PG&E establish a Maximum Allowable Operating Pressure, or MAOP, for all pipeline systems. MAOP includes a wide margin of safety and is set at a fraction of the pipe's calculated strength, which is the minimum pressure at which the pipe is expected to begin deforming. For example, the MAOP for pipelines in areas with more than 45 homes within 220 yards per linear mile on either side of the pipeline is set at no more than half the pipe's calculated strength (PG&E 2013).

PG&E uses a variety of tools to verify the status of their gas pipelines, such as in-the-field leak surveys, in-line inspections and pressure tests. The system is monitored on a 24-hour basis and maintenance personnel regularly conduct leak surveys. PG&E system includes pressures regulator stations and overpressure protection devises. PG&E has hundreds of automatic over pressure protection control valves that protect pipelines and are activated if the pressure gets too high. PG&E also has some lines with rupture control valves for specific needs and the 24 hour control center has the ability to shut down some pipeline systems via remote control (PG&E 2013).

According to PG&E, gas transmission pipelines are generally resistant to earthquake damage and are expected to be operational following earthquakes. In locations where there is believed to be a greater risk of pipeline failure from an earthquake, PG&E works to manage the risk of damage to the pipeline or replace the section of line with a design that is more earthquake resistant (PG&E 2013).

PG&E FACILITIES IN NOVATO

Note: The following information is based on a letter provided from Michael Dale, Associate Engineer at PG&E on June 20, 2013 to De Novo Planning Group.

PG&E has two natural gas transmission pipelines in Novato, Lines 021F and 021G. The sections of Line 021F in the vicinity of the parcels of interest, as detailed below, are made up of 12.75-inch and 16-inch diameter steel pipe installed between 1941 and 2001. The sections of Line 021G in the vicinity of the parcels of interest, as detailed below, are made up of 16-inch and 20-inch diameter

steel pipe installed between 1960 and 2001. Lines 021F and 021G were hydrostatically pressure (strength) tested to establish their Maximum Allowable Operating Pressure (MAOP) of 500 pounds per square inch gauge (psig). At 500 psig, the pipelines would be operating between 24% - 52% (for Line 021F), and 26% - 39% (for Line 021G), of their Specified Minimum Yield Strength (SMYS), which provides a considerable margin of safety. The current operating pressure for Lines 021F and 021G is 320 psig. The additional load from an anticipated 1,200 dwellings would not have any impact on the safe operation of the pipelines.

PG&E has a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E regularly conducts patrols, leak surveys, and cathodic protection (corrosion protection) system inspections for its natural gas pipelines. Any issues identified as a threat to public safety are addressed immediately. PG&E also performs integrity assessments of certain gas transmission pipelines in urban and suburban areas.

Leak Survey: PG&E patrols its gas transmission pipelines quarterly to look for indications of pipeline leaks, missing pipeline markers, construction activity and other factors that may threaten the pipeline. The sections of Lines 021F and 021G that are located in the vicinity of the parcels were last leak surveyed in October 2012 and again in April 2013. No leaks were found.

Cathodic Protection System Inspection: PG&E utilizes an active cathodic protection (CP) system on its gas transmission and steel distribution pipelines to protect them against corrosion. PG&E inspects its CP systems every two months to ensure they are operating correctly. The CP systems on Lines 021F and 021G were last inspected in May 2013 and found to be operating correctly.

Air Patrol: PG&E air patrols its gas transmission pipelines quarterly to look for indications of pipeline leaks, missing pipeline markers, construction activity and other factors that may threaten the pipeline. Lines 021F and 021G through the City of Novato were last air patrolled in May 2013 and everything was found to be normal. PG&E did not identify any threats to the pipeline.

Integrity Assessments: There are three federally-approved methods to complete a transmission pipeline integrity management baseline assessment: In-Line Inspections (ILl), External Corrosion Direct Assessment (ECDA) and Pressure Testing. An In-Line Inspection involves a tool (commonly known as a "pig") being inserted into the pipeline to identify any areas of concern such as potential metal loss (corrosion) or geometric abnormalities (dents) in the pipeline. An ECDA involves an indirect, above ground electrical survey to detect coating defects and the level of cathodic protection. Pressure testing is a strength test normally conducted using water, which is also referred to as a hydrostatic test.

Excavations are performed to do a direct examination of the pipe in areas of concern as required by federal regulations. PG&E performed an ECDA on Line 021F in 2010 and 2013. The assessments identified no issues requiring corrective action. PG&E performed an ECDA on Line 021G in 2006 and that assessment identified no issues requiring corrective action. PG&E is currently performing another ECDA on Line 021G.

PG&E FACILITIES

PG&E natural gas transmission pipelines (Lines 021F and 021G) locations in relationship to the Affordable Housing Overlay (AHO) and emergency shelter sites are shown on Figure 3.7-1 and described below.

Site 1 (APN 140-201-12 and 140-201-48): There are no natural gas transmission pipelines within the proximity of these parcels. The closest gas transmission pipeline is over one-half of a mile southeast of these parcels.

Site 2 (APN 153-162-59): Line 021F is approximately 1500 feet west of the parcel and was installed in 1946 and 1991. Line 021G is approximately 50 feet southwest of the parcel and was installed in 1970.

Site 3 (APN 125-202-18): Lines 021F and 021G are adjacent to the west side of the parcel. Line 021F was installed in 1985 and 1991. Line 021G was installed in 1961. The lines are within a 60-foot wide easement that gives PG&E the right to excavate for, install, replace, maintain, and use pipelines for conveying gas.

Site 4 (APN 143-011-08): Lines 021F and 021G are approximately 300 feet west of the parcel. Line 021F was installed in 1946 and Line 021G was installed in 1970.

Site 5 (APN 140-011-66): There are no natural gas transmission pipelines within the proximity of these parcels. The closest gas transmission pipeline is approximately three-quarters of a mile southeast of the parcel.

Hamilton and Ignacio Industrial Parks: Line 021F is approximately 1,800 feet to the southwest and was installed in 1941 and 2001. Line 021G is approximately 1,200 feet to the southwest and was installed in 1960 and 2001.

Marin County Airport

Marin County Airport (Gnoss Field) is owned and operated by Marin County. The airport is located in unincorporated Marin County approximately ¼ mile from the northernmost boundary of the city limits. Gnoss Field serves an essential regional transportation resource by providing general aviation facilities in the northern portion of the San Francisco Bay area. Gnoss Field is an essential regional transportation resource providing general aviation facilities in the northern portion of the San Francisco Bay area. The airport has been defined by the Federal Aviation Administration (FAA) as a reliever airport in the Bay area and serves approximately 95,000 arrivals and departures each year. Reliever airports provide general aviation pilots with attractive alternatives to using congested commercial service airports and provide general aviation access to the surrounding area (Marin County 2011, pg. 3-3).

The airfield system consists of one 3,300 foot-long runway (designated 13/31) that is oriented in northwest to southeast direction. The runway is 75 feet wide. A parallel taxiway, located 75 feet to the west of the runway provides access for aircraft to the runway ends. A helicopter landing pad,

measuring 60-foot by 60-foot, is located at the southeast corner of the Airport property (Marin County 2011, pg. 3-3).

3.7.2 REGULATORY SETTING

FEDERAL

The primary federal agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the United States Environmental Protection Agency, Department of Labor Occupational Safety and Health Administration (OSHA), and the United States Department of Transportation. Several laws governing the transport, storage, and use of hazardous materials are governed by these agencies as well as oversight for contaminated sites cleanup. Federal laws and regulations that are applicable to hazards and hazardous materials are presented below.

Resource Conservation and Recovery Act

The 1976 Federal Resource Conservation and Recovery Act (RCRA) and the 1984 RCRA Amendments regulate the treatment, storage, and disposal of hazardous and non-hazardous wastes. The legislation mandated that hazardous wastes be tracked from the point of generation to their ultimate fate in the environment. This includes detailed tracking of hazardous materials during transport and permitting of hazardous material handling facilities.

The 1984 RCRA amendments provided the framework for a regulatory program designed to prevent releases from USTs. The program establishes tank and leak detection standards, including spill and overflow protection devices for new tanks. The tanks must also meet performance standards to ensure that the stored material will not corrode the tanks. Owners and operators of USTs had until December 1998 to meet the new tank standards. As of 2001, an estimated 85 percent of USTs were in compliance with the required standards.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, as amended, is the basic statute regulating hazardous materials transportation in the United States. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in interstate commerce. This law gives the United States Department of Transportation and other agencies the authority to issue and enforce rules and regulations governing the safe transportation of hazardous materials (DOE 2002).

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the Act) introduced active federal involvement to emergency response, site remediation, and spill prevention, most notably the Superfund program. The Act was intended to be comprehensive in encompassing both the prevention of, and response to, uncontrolled hazardous substances releases. The Act deals with environmental response, providing mechanisms for reacting to emergencies and to chronic hazardous material releases. In addition to establishing procedures to prevent and remedy problems, it establishes a system for compensating appropriate individuals and assigning appropriate liability. It is designed to plan for and respond to failure in other

regulatory programs and to remedy problems resulting from action taken before the era of comprehensive regulatory protection.

Natural Gas Pipeline Safety Act

The Natural Gas Pipeline Safety Act authorizes the U.S. Department of Transportation Office of Pipeline Safety to regulate pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of liquefied natural gas. The Office of Pipeline Safety regulates the design, construction, inspection, testing, operation, and maintenance of pipeline facilities. While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for State assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. This act allows a state authority (the California Public Utilities Commission (CPUC) in California) that has submitted a current certification to adopt additional or more stringent safety standards for intrastate pipeline facilities and intrastate pipeline transportation if those standards are compatible with the minimum standards prescribed by the federal Pipeline and Hazardous Materials Safety Administration.

Title 49, Code of Federal Regulations (49CFR), Part 192 specifies regulations for gas operators to prepare and implement written emergency plans, liaison with local first responders, and for the large gas operators, to prepare and implement written Public Awareness Programs which provide information, including the availability of NPMS to first responders on an annual basis.

STATE

The primary state agencies that are responsible for overseeing regulations and policies regarding hazardous materials are the California Office of Emergency Services (OES), California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), California Department of Transportation (Caltrans), California Highway Patrol (CHP), California Water Quality Control Board, and the California Air Resources Board. Several laws governing the generation, transport, and disposal of hazardous materials are administered by these agencies. State laws and regulations that are applicable to hazards and hazardous materials are presented below.

California Health and Safety Code

Cal-EPA has established rules governing the use of hazardous materials and the management of hazardous wastes. Many of these regulations are embodied in the California Health and Safety Code. The code includes regulations that govern safe drinking water, substances control, land reuse and revitalization, remediation, restoration, and methamphetamine contaminated cleanups.

California Code of Regulations Title 22 and Title 26

The California Code of Regulations (CCR) Title 22 provides state regulations for hazardous materials, and CCR Title 26 provides regulation of hazardous materials management. In 1996, Cal/EPA established the “Unified Hazardous Waste and Hazardous Materials Management Regulatory Program” (Unified Program) which consolidated the six administrative components of hazardous waste and materials into one program.

Natural Gas Pipeline Safety Act

In 2011, the Natural Gas Pipeline Safety Act (NGPSA), which established Public Utilities Code Sections 950 through 969, was passed. The NGPSA requires the CPUC to establish compatible emergency response standards applicable to owners or operators of CPUC-regulated intrastate gas pipeline transmission and distribution facilities. The emergency response standards require the owners and operators to implement emergency response plan, which include the following requirements: implement emergency shutdown and pressure reduction whenever deemed necessary to minimize hazards to life or property, coordinate with local public agencies to identify potential types of gas pipeline emergencies and plan how the owner/operator and public officials can engage in mutual assistance to minimize hazards to life and property, and maintain information on individual personnel responsible for coordinating with appropriate first-responders.

The NGPSA requires owners and operations of intrastate transmission and distribution lines to meet annually with each local fire department responsible for the area where its lines are located to discuss and review plans for emergencies associated with the lines.

The NGPSA requires the CPUC, unless it determines that doing so is preempted under federal law, to require the installation of automatic shutoff or remote controlled sectionalized block valves on certain intrastate transmission lines that are located in a high consequence area or that traverse an active seismic earthquake fault. The concept of a high consequence area was developed jointly by pipeline industry experts and federal regulators to determine the parts of a pipeline system where periodic integrity assessments are needed to protect the public and the environment. The concept classifies areas into four classes based on population density. Each Class and a High Consequence Area is defined as follows:

Class 1

- An offshore area.
- Class location unit has 10 or fewer buildings intended for human occupancy.
- Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy. Thus, a four- family apartment would be considered as four buildings intended for human occupancy.

Class 2

- Class location unit has more than 10 but fewer than 46 buildings intended for human occupancy

Class 3

- An area that has 46 or more buildings intended for human occupancy
- Where a pipeline lies within 100 yards of either a building or place of public assembly that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period;

Class 4

- An area where buildings with four or more stories above ground are prevalent.

High consequence area

- A Class 3 or Class 4 location.
- An area in a Class 1 or Class 2 location where the potential impact radius is greater than 660 feet (220 yards) and the potential impact circle contains 20 or more buildings intended for human occupancy or an identified site.

The NGPSA requires each gas company to submit a comprehensive pressure testing implementation plan for all intrastate transmission lines to either pressure test lines or to replace all segments of intrastate transmission lines that were not pressure tested or that lack sufficient details related to performance of pressure testing. Twice a year, or as determined by the CPUC, each gas corporation is required to submit a gas transmission and storage safety report for review by the CPUC.

California Public Utilities Commission

The CPUC is responsible for ensuring that the state's natural gas pipeline systems are designed and operating according to safety standards set by the CPUC and the federal government. The CPUC enforces safety regulations, inspects utility work, and oversees the operation of the investor-owned utilities that serve natural gas to the bulk of California residents and businesses: PG&E, Southern California Gas Company, and San Diego Gas & Electric.

The CPUC endorses the system safety approach embodied in the federal government's regulation of pipeline and hazardous materials safety. State and federal regulators are tasked with ensuring that pipeline and hazardous materials operators have risk management programs in place, that those programs are designed in conformance with state and federal laws, that the programs are effective in achieving safety for the public and the employees of the operator, and that the entire system of achieving safety continues to improve itself.

The CPUC conducts compliance inspections, accident investigations, construction inspections, and special studies, reviews utilities' reports and records, and takes action in response to complaints and inquiries from the public on issues regarding gas pipeline safety.

NATURAL GAS SAFETY ACTION PLAN

The Natural Gas Safety Action Plan was developed by the CPUC and updated in April 2013. The Plan guides the CPUC's shift from a traditional compliance model to a regulatory approach that sets, monitors, and enforces rules for regulated utilities based on risk assessment and risk management. The Plan tracks the CPUC's implementation of improvements in response to recommendations made by the Independent Review Panel and the National Transportation Safety Board in response to the San Bruno pipeline explosion that occurred in 2010. The Plan requires the CPUC to review of its current practices and procedures and identify areas for improvement in gas pipeline safety.

The Plan categorizes the efforts of the CPUC into four basic goals :

- Ensuring the safety of the existing gas system
- Upgrading and replacing the gas system to make it safer
- Reforming the CPUC - making safety its first priority
- Instilling Safety Culture in Gas Operators

GENERAL ORDER 112-E

General Order 112-E establishes requirements regarding the design, construction, testing, maintenance and operation of utility gas gathering, transmission and distribution piping systems.

ORDER INSTITUTING RULEMAKING 11-2-019

On February 24, 2011, the CPUC opened Order Instituting Rulemaking 11-2-019 to establish a new model of natural gas pipeline safety regulation applicable to all California pipelines. Subsequently, the CPUC has issued several decisions and resolutions:

Decision 11-06–017 requires all gas transmission pipeline operators to file implementation plans to test or replace gas pipelines that could not be adequately confirmed as having been pressure tested to modern standards and to include plans for the installation of automated valves, and related telemetry equipment, to provide real-time information regarding pressures and flows, and to enable operators to isolate line ruptures occurring in densely populated, high consequence areas.

Decision 12-04-010 required all gas utilities to file, no later than June 29, 2012, Gas Safety Plans detailing how the gas utilities address each element of Public Utilities Code Sections 961 and 963.

Resolution ALJ-274 delegates authority to certain Commission staff to issue citations to all gas corporations to enforce compliance with General Order 112-E.

LOCAL

City of Novato General Plan

The City of Novato General Plan contains the following objectives and policies that are relevant to hazards and hazardous materials aspects of the proposed project:

SF Policy 13 Multihazard Emergency Plan. Update the City's *Emergency Preparedness Plan,* as needed.

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 Policy 17 Level of Fire Protection. Work with Novato Fire Protection District to help ensure a continued high level of fire protection.

SF Policy 18 Vegetation Management. Continue to implement an effective and environmentally sound vegetation management and weed abatement program.

SF Policy 22 Fire Hazard on Public Lands. Public lands should be managed to minimize the chances of a wildfire that would affect residences and businesses in Novato.

SF Policy 28 Measures to Reduce Hazards. Consider measures to protect the public health from the hazards associated with the transportation, storage and disposal of hazardous wastes (TSD Facilities).

SF Policy 29 CEQA Review of proposed TSD Facilities. Support thorough environmental review for hazardous waste transportation, storage and disposal (TSD) Facilities proposed in the Novato area and throughout Marin County, since the potentially significant, widespread and long-term impacts on public health and safety of these facilities do not respect jurisdictional boundaries.

SF Policy 30 Hazardous Materials Storage. Strictly regulate the storage of hazardous materials.

SF Policy 31 Truck Routes for Hazardous Materials Transport. Develop, in cooperation with the County and neighboring cities, regulations prohibiting through-transport by truck of hazardous materials on the local street systems and requiring that this activity be limited to State highways.

SF Policy 35 Gnoss Field Airport Hazards. Minimize risk to lives and property due to hazards associated with the operation of Gnoss Field Airport.

SF Policy 36 County Airport Planning. Continue to monitor the County's planning efforts for Gnoss Field Airport to ensure that the health and safety of Novato residents are protected.

Novato Emergency Operation Plan

The City of Novato Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with disasters affecting Novato. The plan also addresses integration and coordination with other governmental agencies when required. This plan is not intended to address the day-to-day emergency or well established emergency procedures.

This plan accomplishes the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting Novato
- Establishes the overall operational concepts associated with Novato's Emergency Operations Center (EOC) activities and the recovery process

This plan is based on the functions and principles of the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the California Incident Command System (ICS). It identifies how the Novato emergency operational system fits into the overall California and National risk-based, all-hazard emergency response and recovery operations plan.

This document serves as a planning reference and as a basis for effective response to any hazard that threatens Novato. Departments within the City of Novato, and other agencies that have roles and responsibilities identified by this plan, are encouraged to develop plans, detailed standard operating procedures (SOPs), and emergency response checklists based on the provisions of this plan.

Novato Municipal Code

SECTION 1-6.3 PUBLIC NUISANCES ADVERSELY AFFECTING THE PUBLIC PEACE AND SAFETY

This section addresses hazardous materials control declaring any release as a health and safety issue.

The following are expressly declared to be public nuisances adversely affecting the public peace and safety:

> a. Storage, leakage, release, or use of any explosive, flammable liquid, or other dangerous, toxic, or hazardous substance in any manner or in any amount other than as permitted pursuant to this code and county, State, or Federal laws.

SECTION 7-2 - DUMPING GARBAGE AND HAZARDOUS WASTE.

7-2.1 Violation Defined. Any persons, firm, or corporation, whether as principal agent, employee, or otherwise, creating, causing, committing, or maintaining:

> d. Any extremely hazardous waste, hazardous waste, or infectious waste as defined in Health and Safety Code Section 25115 et seq., or any toxic substance as defined in Health and Safety Code Section 28745 to be spilled upon or in any public park, square, school, street or highway (including sidewalk, parkway, or any other portion of the right-of-way thereof), bay, lake, waterway, drainageway, easement, or other public place, or upon private property.

Novato Fire Protection District

NFPD ORDINANCE 2007-2

NFPD Ordinance 2010-2 adopts the California Fire Code which regulates hazardous conditions from fire or explosion and permits for hazardous uses or operations. This ordinance also establishes a fire loss management division and defines the powers and duties of its officers.

NFPD FIRE PROTECTION STANDARD 222

Fire protection Standard 22 requires fire resistive construction for all remodels and alterations to existing buildings for property located in Wildland-Urban Interface Areas. This standard provides regulations for windows, doors, decking, exterior walls, roofing, roof gutters, and attic ventilation.

NFPD INTEGRATED RISK MANAGEMENT PLAN: STANDARDS OF COVER

The NFPD's Standards of Cover document assists NFPD in ensuring a safe and effective response force for fire suppression, emergency medical services, and specialty response situations, in addition to homeland security issues. The plan discusses areas such as risk assessment, critical task analysis, agency service level objectives, and distribution and concentration measures. It

documents reliability studies and historical performance through charts, maps and graphs, and concludes with policy recommendations.

Included in the Standards of Cover is an assessment of the significant structures that exist within the NFPD using a process called Risk, Hazard, and Value Evaluation (RHAVE), a nationally recognized evaluation tool. RHAVE offers a set of tools and methods to help fire service and community leaders make objective, quantifiable decisions about their fire and emergency service needs. According to the RHAVE categories, most properties in Novato are classified as Category 3, routine or typical risks.

Marin County Operational Area Hazard Mitigation Plan

The Hazard Mitigation Plan is the product of the Marin County Sheriff Office of Emergency Services. The purpose is to meet the requirements of the Disaster Mitigation Act of 2000 (DMA) - (Public Law 106-3900) and thereby maintain continued eligibility for certain Hazard Mitigation – or disaster loss reduction – programs from the Federal Emergency Management Agency (FEMA), now a part of the Department of Homeland Security. The Interim Final Rule published in the Federal Register on February 26, 2002 and October 1, 2002 established mitigation planning requirements for local governments. Marin County covers 521 square miles with a population of over 250,000 in eleven incorporated cities and towns and the county's unincorporated area. Most of the population is located in the urban corridor located along the east-central part of the county, adjacent to Highway 101. Marin County plays a large part in the economy of the San Francisco Bay Area.

Marin County Department of Public Works

The Waste Management Division of the Marin County Department of Public Works has been certified by Cal-EPA as the Certified Unified Program Agency (CUPA). The CUPA is the local agency responsible for coordination of hazardous waste generator programs, fuel underground storage tank (UST) management, tiered permitting process for waste treatment and administering the Hazardous Materials Business Plan (HMBP) program. Businesses that store, handle, or dispose of hazardous materials must submit a HMPB to the CUPA in accordance with California Health and Safety Code Section 25504. The HMBP must be updated every two years, or within 30 days after a substantial change in site operations. The HMBP must:

- List all the hazardous materials stored at a site.
- Identify emergency response procedures for spills and personnel.
- Identify evacuation plans and procedures.
- Identify training records for personnel to substantiate annual refresher training.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact from hazards and hazardous materials if it will:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildands are adjacent to urbanized areas or where residences are intermixed with wildlands.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (Less than Significant)

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development.

Some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts (Program 12.D), allowing farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Table 2.0-1, these programs would not require the routine transport, use, or disposal of hazardous materials. The potential for the AHO sites and the emergency shelter site and their surroundings to be affected by the routine transport, use, or disposal of hazardous materials from other development in and around the City of Novato is discussed below. Hazardous conditions related to natural gas pipelines are discussed under Impact 3.7-2.

The City of Novato General Plan has a number of policies designed to reduce the potential for hazardous materials release. Safety and Noise Chapter Policy 28 requires the City to consider measures to protect the public health from the hazards associated with the transportation, storage and disposal of hazardous wastes (TSD Facilities). Safety and Noise Chapter Policy 29 requires a thorough environmental review for hazardous waste transportation, storage and disposal (TSD) facilities proposed in the Novato area and throughout Marin County. Safety and Noise Chapter Policy 30 requires the City to strictly regulate the storage of hazardous materials. Safety and Noise Chapter Policy 31 requires the City to provide regulations prohibiting through-transport by truck of hazardous materials on the local street systems and requiring that this activity be limited to State highways.

The Novato Municipal Code provides regulations pertaining to hazards materials. Section 1-6.3 declares that it is unlawful to store, leak, release, or use any explosive, flammable liquid, or other dangerous, toxic, or hazardous substance in any manner or in any amount other than as permitted pursuant to this code and county, State, or Federal laws. Section 7-2.1d states that it is a violation of City code for any extremely hazardous waste, hazardous waste, infectious waste or any toxic substance to be spilled upon or in any public park, square, school, street or highway (including sidewalk, parkway, or any other portion of the right-of-way thereof), bay, lake, waterway, drainageway, easement, or other public place, or upon private property.

Both the United States Environmental Protection Agency and the United States Department of Transportation regulate the transport of hazardous waste and material, including transport via highway. The United States Environmental Protection Agency administers permitting, tracking, reporting, and operations requirements established by RCRA. The United States Department of Transportation regulates the transportation of hazardous materials through implementation of the Hazardous Materials Transportation Act. This act administers container design, and labeling and driver training requirements. These established regulations are intended to track and manage the safe interstate transportation of hazardous materials and waste. Additionally, State and Local agencies enforce the application of these acts and provide coordination of safety and mitigation responses in the case that accidents involving hazardous materials occur. Enforcement of these acts and rapid response by local agencies would reduce hazardous materials transportation health hazards to a less than significant level.

Construction activities associated with development of new housing may include refueling and minor maintenance of construction equipment on-site which could lead to minor fuel and oil spills. The use and handling of hazardous materials during construction activities would occur in accordance with applicable Federal, State, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements. All construction activities would be subject to the NPDES permit process which requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which would be reviewed and approved by the Regional Water Quality Control Board. A SWPPP is required to include best management practices to prevent, minimize, or address the release of hazardous materials during construction, including grease, oil, and fuel leaked from heavy equipment, to prevent soil and water contamination. Best management practices may include: placing equipment in a contained area when needing to be cleaned, leaking fluid, or being refueled; providing concrete washout locations; and, storing flammable/hazardous materials in locked cabinets.

Neither single family or multifamily residential units routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc. Accordingly, the future operation of a multi-family residential project on any of the five AHO sites would not expose residents to hazardous materials or wastes.

AHO Site 4 (7506 Redwood Boulevard) is located adjacent to the Sonoma Marin Area Rail Transit (SMART) District rail line. SMART will utilize its rail line for passenger rail service. However, this particular rail line is also used by the North Coast Rail Authority (NCRA) for the movement of freight. According to the Draft Environmental Impact Report for the North Coast Rail Authority Russian River Division Freight Rail Project, the NCRA would not haul cargo of hazardous materials or waste. Given this circumstance, a future multi-family residential development project at Site 4 would not be exposed to the accidental release of hazardous materials as a result of the freight rail operations conducted by NCRA. SMART will provide a commuter rail service, which does not involve the transport of hazardous materials or wastes.

Conclusion: In conclusion, the City of Novato General Plan includes several policies to protect those living in the City from the potential of hazardous waste exposure. Additionally, the Novato Municipal Code addresses the dumping, storing, leaking, releasing of hazardous materials and waste declaring the improper handling of this material to be unlawful. Both the United States Environmental Protection Agency and the United States Department of Transportation regulate the transport of hazardous waste and material, including transport via highway. All future housing developments in the City are required to conform to local, state and federal law with regards to hazardous material and waste. Local policies and ordinances, and state/federal regulations provide a reasonable level of mitigation to ensure that the health and safety risks to humans and property from hazardous materials are mitigated to a less than significant level. As such, implementation of the Housing Element would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and would have a **less than significant** impact relative to this topic.

Impact 3.7-2: Potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Less than Significant)

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development.

Some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts (Program 12.D), allowing farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Table 2.0-1, these programs would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, existing natural gas pipelines through the City of Novato, including locations adjacent to the AHO sites and emergency shelter site, could be affected by a reasonably foreseeable upset and accident conditions. This is discussed in more detail below.

PG&E has two natural gas transmission pipelines in Novato, Lines 021F and 021G. The sections of Line 021F in the vicinity of the parcels of interest, as detailed below, are made up of 12.75-inch and 16-inch diameter steel pipe installed between 1941 and 2001. The sections of Line 021G in the vicinity of the parcels of interest, as detailed below, are made up of 16-inch and 20-inch diameter steel pipe installed between 1960 and 2001. Lines 021F and 021G were hydrostatically pressure (strength) tested to establish their Maximum Allowable Operating Pressure (MAOP) of 500 pounds per square inch gauge (psig). At 500 psig, the pipelines would be operating between 24% - 52% (for Line 021F), and 26% - 39% (for Line 021G), of their Specified Minimum Yield Strength (SMYS), which provides a considerable margin of safety. The current operating pressure for Lines 021F and 021G is 320 psig. The additional load from an anticipated 1,200 dwellings would not have any impact on the safe operation of the pipelines.

PG&E has a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E regularly conducts patrols, leak surveys, and cathodic protection (corrosion protection) system inspections for its natural gas pipelines. Any issues identified as a threat to public safety are addressed immediately. PG&E also performs integrity assessments of certain gas transmission pipelines in urban and suburban areas. PG&E's recent surveys and inspections of lines 021F and 021G located in the vicinity of the AHO sites have not identified any leaks or operational deficiencies.

PG&E Facilities Near AHO Sites: The location of PG&E natural gas transmission pipelines (Lines 021F and 021G) in relationship to the AHO Sites are described below and shown on Figure 3.7-1.

Site 1 (1787 Grant Avenue): There are no natural gas transmission pipelines within the proximity of these parcels. The closest gas transmission pipeline is over one-half of a mile southeast of these parcels. Development of this site will not present significant direct or indirect impacts related to accident conditions at the PG&E natural gas transmission lines in Novato due to the distance to the closest transmission line.

Site 2 (Landing Court): Line 021F is approximately 1500 feet west of the parcel and was installed in 1946 and 1991. Line 021G is approximately 50 feet southwest of the parcel and was installed in 1970. Development of this site will not present direct impacts related to accident conditions at the PG&E natural gas transmission lines in Novato because the natural gas lines are not located on the site and construction activities will not come into direct contact with these pipelines. Development on the site, however, has the potential to be indirectly impacted from accident conditions occurring with Line 021G, which is only 50 feet southwest of the parcel. Line 021G, and all natural gas transmission lines, undergo a comprehensive inspection and monitoring program to ensure the safety of its natural gas transmission pipeline system. PG&E conducted patrols, leak surveys, and cathodic protection (corrosion protection) system inspections for Line 021G in April-May 2013. There were no issues identified as a threat to public safety. PG&E is currently performing an integrity assessment of Line 021G. The last integrity assessment of Line 021G was performed in 2006 and it showed no issues identified as a threat to public safety. The federal and state-mandated comprehensive inspection and monitoring program for natural gas pipelines ensures that potential impacts are reduced to a less than significant level.

Site 3 (Redwood Boulevard): Lines 021F and 021G are adjacent to the west side of Site 3. Line 021F was installed in 1985 and 1991. Line 021G was installed in 1961. Development of Site 3 will not present direct impacts related to accident conditions at the PG&E natural gas transmission lines in Novato because the natural gas lines are not located on the site and construction activities will not come into direct contact with these pipelines. Development on the site, however, has the potential to be indirectly impacted from accident conditions occurring with Line 021F and 021G, which is adjacent to the west side of the site. Line 021F and 021G, and all natural gas transmission lines, undergo a comprehensive inspection and monitoring program to ensure the safety of the natural gas transmission pipeline system. PG&E conducted patrols, leak surveys, and cathodic protection (corrosion protection) system inspections for Line 021F and 021G in April-May 2013. There were no issues identified as a threat to public safety. PG&E performed an integrity test of Line 021F in May 2013 and there were no issues identified as a threat to public safety. PG&E is currently performing an integrity assessment of Line 021G. The last integrity assessment of Line 021G was performed in 2006 and it showed no issues identified as a threat to public safety. The federal and state-mandated comprehensive inspection and monitoring program for natural gas pipelines ensures that potential impacts are reduced to a less than significant level.

Site 4 (7506 Redwood Boulevard): Lines 021F and 021G are approximately 300 feet west of the parcel. Line 021F was installed in 1946 and Line 021G was installed in 1970. Development of this

site will not present significant direct or indirect impacts related to accident conditions at the PG&E natural gas transmission lines in Novato due to the distance to the closest transmission line.

Site 5 (1905 Novato Boulevard): There are no natural gas transmission pipelines within the proximity of this parcel. The closest gas transmission pipeline is approximately three-quarters of a mile southeast of this parcel. Development of this site will not present direct or indirect impacts related to accident conditions at the PG&E natural gas transmission lines in Novato due to the distance to the closest transmission line.

During the public comment period conducted for the Notice of Preparation for this EIR, comments were received from residents of Partridge Knolls expressing concern about the potential location of multi-family homes at Site 3 due to its proximity to PG&E natural gas lines 021F and 021G. These comment letters cited information concerning best management practices as recommended by Pipeline and Hazardous Materials Safety Administration (PHMSA) and Pipelines and Informed Planning Alliance (PIPA), including recommended setbacks for new development near gas pipelines. The recommendations and best management practices prepared by PHMSA and PIPA are not adopted state or federal mandates for new development proposed near gas lines. Rather, these recommendations and best management practices are intended to assist public agencies should there be a desire to adopt local regulations addressing new development near gas pipelines.

The decision whether the best management practices and setback recommendations of PHMSA and PIPA should be applied to the new development at Site 3 is a policy decision that is beyond the scope of this EIR. This EIR has analyzed all applicable safety regulations adopted for natural gas lines and has described the measures implemented by PG&E to comply thereto with respect to the condition, operation, and maintenance of gas lines 021F and 021G. Based on this analysis, the EIR determined the comprehensive inspection and monitoring program mandated by the CPUC and implemented by PG&E provides a reasonable level of mitigation to ensure that the health and safety risks to humans and property from natural gas line accident conditions are mitigated to a less than significant level.

The CPUC requires regular inspections of the natural gas pipelines. Natural gas pipeline operators are required to file regular reports and to take corrective actions within state-specified timeframes to address potential safety issues. PG&E implements a comprehensive inspection and monitoring program of their natural gas pipelines in Novato to ensure the safety of its natural gas transmission pipeline system. PG&E regularly conducts patrols, leak surveys, and cathodic protection (corrosion protection) system inspections for its natural gas pipelines. Any issues identified as a threat to public safety are addressed immediately. PG&E also performs integrity assessments of certain gas transmission pipelines in urban and suburban areas. These tests have been performed as recently as April-May 2013. This comprehensive inspection and monitoring program provides a reasonable level of mitigation to ensure that the health and safety risks to humans and property from accident conditions are mitigated to a less than significant level. As such, implementation of the Housing Element would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. This would be a **less than significant** impact relative to this topic.

Impact 3.7-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (No Impact)

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would involve uses that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. As such, implementation of the proposed Housing Element would have a **no impact** relative to this topic.

Impact 3.7-4: Potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (Less than Significant)

The Novato Emergency Operation Plan addresses the planned response to extraordinary emergency situations associated with disasters affecting Novato. The plan also addresses integration and coordination with other governmental agencies when required. This plan is not intended to address the day-to-day emergency or well established emergency procedures. The Marin County Operational Area Hazard Mitigation Plan was developed to meet the requirements of the Disaster Mitigation Act of 2000.

The proposed project is the development of the Novato Housing Element. The Housing Element does not propose any policies or programs that would conflict with the City's Emergency Operation Plan of the Marin County Operational Area Hazard Mitigation Plan.

Future development facilitated by the Housing Element would be located on existing parcels within the City of Novato and would not encroach on or obstruct any existing evacuation routes. All new development would be required to comply with existing fire codes and ordinances regarding emergency access, such as the widths, surfaces, vertical clearance, brush clearance, and allowable grades. The City would implement emergency response measures to address emergency management, including notifications, evacuations, and other necessary measures in the event of an emergency.

Site 1 (1787 Grant Avenue) is accessed from Grant Avenue. Grant Avenue would serve as the primary emergency response route to the site. Grant Avenue would also serve as the primary location for emergency egress from the site. Grant Avenue is a public street with a right-of-way width of approximately 60-feet. Grant Avenue was constructed to meet Novato's public street standards, which require pavement structural sections capable of supporting the weight and movement of emergency vehicles. Grant Avenue is adequate to provide emergency ingress and egress for a future multi-family residential project at Site 1.

Site 2 (Landing Court) takes primary access from Landing Court. Landing Court would serve as the primary emergency response route to Site 2, as well as the emergency egress route from the site. Emergency access (ingress/egress) is ultimately subject to review and approval by the City of Novato Police Department and Novato Fire Protection District during the site planning process for

a development project. Landing Court is a 64-foot wide public right-of-way. This roadway was constructed to meet Novato's public street standards, including pavement structural sections capable of supporting the weight and movements of emergency vehicles, such as a fire engine. Landing Court provides the most direct emergency route to Site 2 recognizing Novato Fire Protection District Station 61 (7025 Redwood Boulevard) is located on the west side of the intersection of Redwood Boulevard and Landing Court. Police responders would utilize Landing Court to reach Site 2 since it represents the most direct route to the site.

The northern boundary of Site 2 abuts the terminus of Clausing Avenue. The potential to use Clausing Avenue for emergency access to the site was reviewed to determine if elimination of such access for a future multi-family residential project located thereon would result in a significant impact. As noted above, Fire Station 61 is located on the west side of the intersection of Redwood Boulevard and Landing Court. Fire units dispatched from Station 61 would simply cross this signal controlled intersection to reach Site 2. A fire response through Clausing Avenue would represent a more circuitous route to Site 2 and would likely increase response time. A police response to Site 2 would occur via Redwood Boulevard, which connects to Landing Court. A police response via Clausing Court also represents a more circuitous route, which would likely increase response time. Given these observations, elimination of emergency access via Clausing Avenue for a future development project at Site 2 would not result in a significant impact associated with an emergency response or evacuation plan.

Site 3 (Redwood Boulevard) is accessed from Redwood Boulevard. Redwood Boulevard would serve as the emergency route to Site 3. Redwood Boulevard near Site 3 is approximately 50-feet wide providing two travel lanes and a sidewalk on the west side of the roadway. Redwood Boulevard formerly served as U.S. Highway 101 through Novato until the early 1970's. As such, the roadway was designed to support large trucks of significant weight and is adequate to support the weight and movement of emergency vehicles. Based on these observations, Redwood Boulevard is adequate to serve the emergency access needs of a future multi-family residential project at Site 3.

Site 4 (7506 Redwood Boulevard) is accessed from Olive Avenue. Olive Avenue is an 80-foot right-of-way featuring two travel lanes and parking and sidewalk on the south side of the street. Olive Avenue was constructed to meet Novato's public street standards, including minimum pavement structural sections to support heavy vehicle weights. As-built, Olive Avenue is adequate to support the movement and weight of emergency vehicles. Olive Avenue is proposed to be widened to allow the installation of on-street parking, sidewalk, and a bike lane on the north side of the street. This project is being designed by the Novato Public Works Department and will include pavement structural sections capable of supporting large trucks and emergency vehicles. Olive Avenue as it exists today and as may be expanded in the future would adequately serve the emergency access needs of a future multi-family residential project at Site 4.

Site 5 (1905 Novato Boulevard) is accessed from Novato Boulevard. Novato Boulevard is a public street of approximately 60-feet wide, featuring four travel lanes, a central turn lane, and bike lanes on both sides of the roadway. Novato Boulevard was constructed to meet public street standards, including pavement structural sections capable of supporting high weight commercial trucks and emergency vehicles. Novato Boulevard, based on its width and structural design, is considered to

be adequate to meet the emergency access needs for a future multi-family residential project at Site 5.

The future development of a multi-family residential project at the five AHO sites would be subject to Novato's design review process. Through this process, a given project's design plans would be referred to the Novato Fire Protection District for review and comment. The Fire District's review includes consideration of emergency access within the project site itself, including driveways and drive aisles, the structural design of pavement sections, turning radiuses, and the location, height and spread of trees. The purpose of this review is to insure that a project is designed to allow Fire District emergency apparatuses unobstructed access and movement within a given site. Through the design review process, the Fire District assigns conditions of approval based on the District's adopted Fire Protection Standards, including Standard 210, which addresses roadway, driveway, and bridge design. A project designed and constructed in accordance with the Fire District's standards is considered to assure emergency access within a given site. Based on the analysis above, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Nor would the project result in inadequate emergency ingress and egress to any of the five AHO sites were these sites to be developed with a future multi-family residential project. The project's impact with respect to emergency access would therefore be **less than significant**.

Impact 3.7-6: Potential for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area (Less than Significant)

Airports establish planning boundaries for height, noise and safety around each airport as well as policies that determine the compatibility of new land uses proposed within each planning area boundary. State Airport Land Use Commission (ALUC) law requires a jurisdiction to either amend its General Plan and other land use regulations to achieve consistency with airport Comprehensive Land Use Plan (CLUPs) adopted by the ALUC. Additionally, the Federal Aviation Regulations (FAR) Part 77 defines a series of imaginary surfaces surrounding all public use airports. Any proposed object or structure that would penetrate any of these imaginary surfaces as they apply to the affected airport facilities is considered by the Federal Aviation Administration (FAA) to be an obstruction to air navigation. An obstruction to air navigation may not be a hazard to air navigation; however, the FAA presumes it to be a hazard and treats it as such until an FAA aeronautical study had determined that it does not have a substantial adverse effect on the safe use of the navigable airspace by aircraft. The imaginary surfaces the FAA uses to determine whether or not a structure or an object would be an obstruction to air navigation includes the primary surface, approach surface, horizontal surface, conical surface, and transitional surfaces. The CLUP determines compatibility of surrounding land uses based upon noise levels associated with the airport operations and exposure of persons to crash hazards associated with aircraft and height restrictions.

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description

identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development. Some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks (HO Program 12.A), permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts (HO Program 7.C), requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts (Program 12.D), allowing farmworker housing as a permitted use in the agricultural district as required under state law (Program 12.E)) as described in Table 2.0-1. The development of the AHO sites and the emergency shelter site, and other programs that would increase development density and intensity, could result in airport hazards if they are proximate to an airport and deemed inconsistent with the CLUP.

Gnoss Field is the closest airport to Novato. Site 3 (Redwood Boulevard) is the only AHO site that is located within 2 miles of Gnoss Field. Site 3 is approximately one mile from the airport and outside of the airport clear zone (Marin County Airport 1997 pg. 4.7). Development of this site would not conflict with the CLUP.

The Novato General Plan includes policies regarding airports and the risk to persons. Safety and Noise Chapter Policy 35 requires the City to minimize risk to lives and property due to hazards associated with the operation of Gnoss Field Airport. Safety and Noise Chapter Policy 36 requires the city to continue to monitor the County's planning efforts for Gnoss Field Airport to ensure that the health and safety of Novato residents are protected.

Future development facilitated by the Housing Element would be located on existing parcels within the City of Novato and would not encroach on or obstruct any air navigation areas. All new development would be required to comply with existing General Plan policies regarding airport safety. As such, implementation of the proposed Housing Element would have a **less than significant** impact relative to this topic.

Impact 3.7-6: Potential for a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area (No Impact)

There are no private airstrips within the vicinity of future development facilitated by the Housing Element that would result in a safety hazard for people. The existing parcels within the City of Novato, including the five Affordable Housing Opportunity Sites, would not encroach on or obstruct any private airstrips. All new development would be required to comply with existing General Plan policies regarding airport safety. As such, implementation of the proposed Housing Element would have a **no impact** relative to this topic.

Impact 3.7-7: Potential to expose people or structures to a risk of loss, injury or death involving **wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (**Less than Significant)

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. Most wildland fires are human caused, so areas with easy human access to land with the appropriate fire parameters generally result in an increased risk of fire.

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development. The Housing Element does not propose new residential development in an area designated as a Very High Fire Hazard Severity Zone on the Marin County Fire Hazard Severity Zone Map or the area designated as a Wildland Urban Interface (WUI) on the Novato Fire Protection District's Novato's Wildland Urban Interface (WUI) Map. This is discussed below.

According to the Marin County Fire Hazard Severity Zone Map, Novato is a Local Responsibility Area (LRA) that is designated mostly as a Non-VHFHSZ (Non-Very High Fire Hazard Severity Zone), with a portion of southern Novato designated as a Very High Fire Hazard Severity Zone. None of the five housing sites or emergency shelter site is within an area designated as a Very High Fire Hazard Severity Zone.

The Novato Fire Protection District has mapped Novato's Wildland Urban Interface (WUI). The WUI includes areas that have topographic and vegetation characteristics that increase the potential for a wildland fire that could result in the loss of structures therein. The Fire District identified approximately 12,000 parcels in Novato that lie within the WUI. None of the five AHO sites or emergency shelter site is located in Novato's WUI. As such, these sites are not considered to be susceptible to a high risk of wildland fire. Accordingly, the future development of multi-family residential units at the AHO and an emergency shelter(s) within the Hamilton and Ignacio Industrial Parks would not be exposed to a significant risk of wildland fire.

Regardless of mapping designations by the State or Novato Fire Protection District, the City of Novato has adopted a number of General Plan policies to assist in the protection of persons and structures from wildland fire. Safety and Noise Chapter Policy 16 requires the review of all development proposals for fire risk, and requires mitigation measures to reduce the probability of fire. Safety and Noise Chapter Policy 17 requires the City to work with Novato Fire Protection District to help ensure a continued high level of fire protection. Safety and Noise Chapter Policy 18 requires a continuation of environmentally sound vegetation management and weed abatement program. Safety and Noise Chapter Policy 22 states that public lands should be managed to

minimize the chances of a wildfire that would affect residences and businesses in Novato. Additionally, the NFPD has adopted the most recent version of the California Fire Code and Fire Protection Standard 222. All of these policies would assist in the reduction of the potential for wildland fires to existing and future residents of the City of Novato. Based on the analysis and facts above, implementation of the Housing Element would have a **less than significant** impact relative to this topic.

Impact 3.7-8: Potential to be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment (No Impact)

A main objective of the Housing Element is to meet the City's housing needs, including accommodating a variety of housing types and densities. Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato including the five AHO sites and an emergency shelter(s) in the Hamilton and Ignacio Industrial Parks would not be located on a site listed as a hazardous materials release compiled pursuant to Government Code Section 65962.5. Tables 3.7-1 and 3.7-2 list the identified hazardous waste release sites in the City pursuant to Government Code Section 65962.5. Implementation of the Housing Element would have **no impact** relative to this topic.

REFERENCES

Battelle. 2011. *Annual Site Status Report for the Year 2010 UST Site 957/970 Former Department of Defense Housing Facility*. Prepared for the Department of the Navy Base Realignment and Closure Program Management Office West. Battelle. Columbus, OH. February 28, 2011.

DTSC. 2013. California Department of Toxic Substance Control (DTSC). *EnviroStor Website 2013.* Accessed May 31, 2013.

DTSC. 2013. California Department of Toxic Substance Control. Fact Sheet. *Human Health Risk Assessment Update – Home Grown Fruits DODHF Novato – Hamilton Meadows Housing Development*. July 2013.

California State Water Resources Control Board (SWQCB). *GeoTracker, 2013.* Accessed May 31, 2013.

City of Novato. 2007. *City of Novato General Plan – Revision October 9, 2007.* Novato, California. Resolution No. 122-07.

City of Novato. 2000. *Environmental Review Guidelines.* Novato, California. Revised April 2000.

City of Novato. 2009. *Existing Conditions Report.* Novato, California. March 25, 2009.

City of Novato. 2013. *2007-2014 Housing Element*. Novato, California. Revised Draft April 18, 2013.

City of Novato. 2013. Municipal Code. Novato, California. Available at: http://www.ci.novato.ca.us/. Accessed: June 3, 2013.

Marin County. 2011. *Gnoss Field Airport Proposed Extension Of Runway 13/31 Draft Environmental Impact Report. December 2011. State Clearinghouse No. 2008072037.* Available at: http://www.gnossfieldeis-eir.com/reports_documents/volume2.htm. Accessed: June 3, 2013.

Marin County. 1997. *1989 Airport Master Plan (Updated 1997).* March 11, 1997.

Novato Fire Protection District (NFPD). 2013. *Wildland-Urban Interface Zone map*. Available at: http://38.106.4.191/index.aspx?page=130 Accessed: June 4, 2013.

PG&E. 2013. PG&E Natural Gas System website. Available at: http://www.pge.com/myhome/edusafety/systemworks/gas/. Accessed: June 1, 2013.

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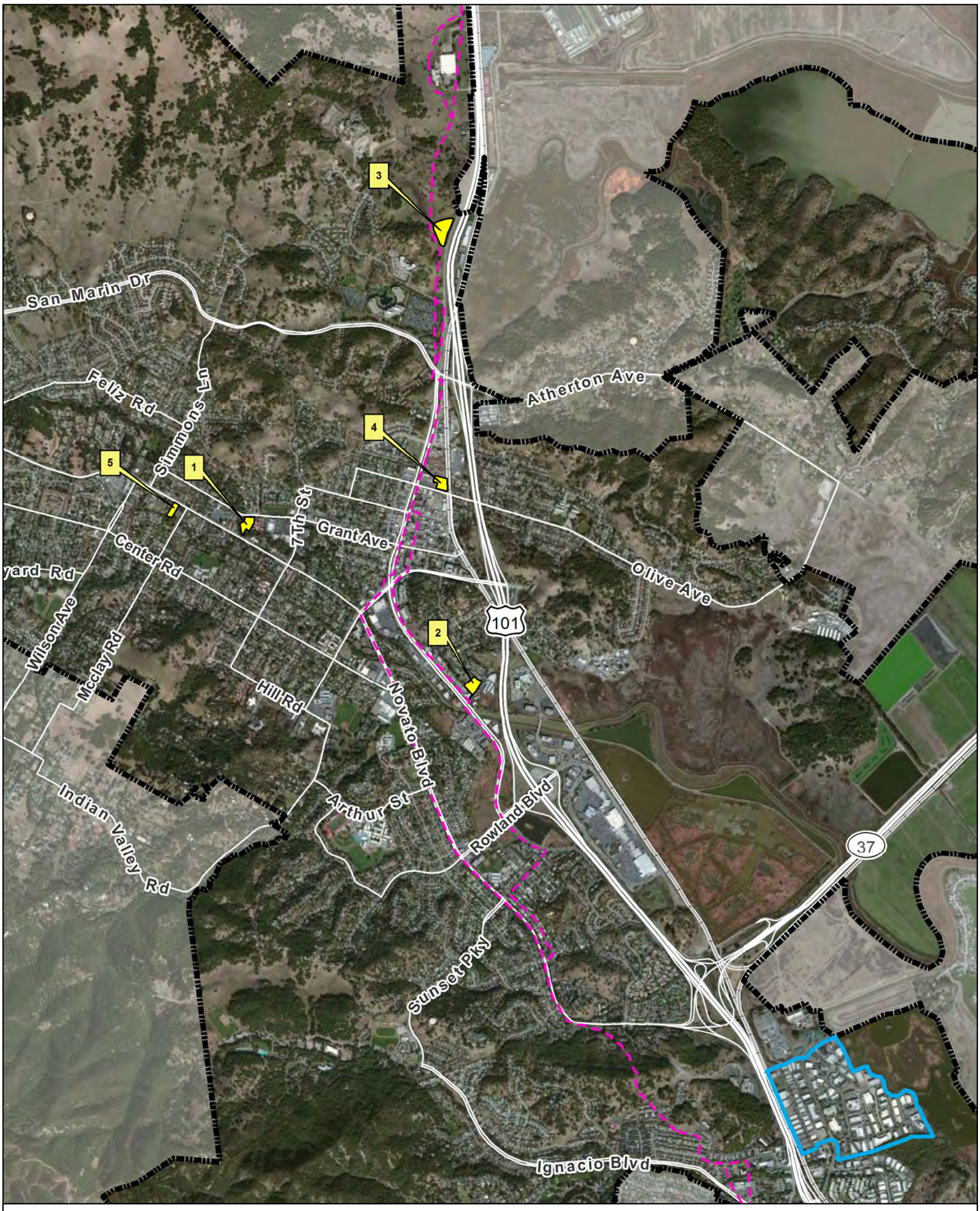

CITY OF NOVATO HOUSING ELEMENT

Figure 3.7-1: PG&E Pipelines

Gas Transmission Pipeline

Affordable Housing Overlay Sites

Hamilton and Ignacio Industrial Sites

City of Novato

N

0 0.25 0.5

Miles

Data sources: PG&E, 2013 (pipeline locations approximated);
ESRI StreetMap North America; BING Aerial Image. Map date: August 5, 2013.

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

This section describes the regulatory setting, regional hydrology and water quality, impacts that are likely to result from Housing Element implementation, and measures, if necessary, to reduce potentially significant impacts to hydrology and water quality.

This section is based in part on the following documents, reports and studies: *California's Groundwater Bulletin 118 [San Francisco Hydrologic Region - Novato Valley Groundwater Basin] (DWR 2004), CGS Tsunami Web Site, Tsunami Inundation Maps* (CGS 2013), *Which Lakes, Streams, or Ocean Locations Are Listed By The State As Impaired?* (California Water Quality Control Monitoring Council 2013), *City of Novato General Plan – Revision October 9, 2007* (City of Novato 2007), *Existing Conditions Report* (City of Novato 2009), and the Map Service Center (FEMA 2013).

No comments were received during the NOP comment period regarding hydrology and water quality.

3.8.1 EXISTING SETTING

REGIONAL HYDROLOGY

Surface Water

Novato is located within the San Francisco Bay Area Hydrologic Basin. The San Francisco Bay functions as the drainage outlet for the waters of the Central Valley. San Francisco Bay can be divided into distinct waterbodies that have different physical and chemical properties. The northern reach includes three major embayments: Suisun Bay, San Pablo Bay and Central Bay.

Novato is located on the western shore of San Pablo Bay. Areas near San Pablo Bay are largely salt marsh and levied wetlands. The physical characteristics (i.e. salinity, temperature, and suspended solids) of the waters of San Pablo Bay vary greatly on a given day due to its location between Suisun Bay and the saltier San Francisco Bay. The interaction of waters of varying salinity has a major influence on the circulation of water in San Pablo Bay itself. When freshwater and saltwater meet, the denser saltwater tends to flow under the freshwater until the waters are mixed by stronger tidal currents and winds.

While the major source of freshwater to San Pablo Bay is inflow from the Delta, other surface water flow, including the Napa and Petaluma Rivers, stormwater runoff, and groundwater are important sources of fresh water to San Pablo Bay. Surface runoff creates the majority of freshwater flows within the rivers and streams. Consequently, stream flow in all of the creeks and rivers varies from season to season depending on precipitation. Most of the water flow during a given year occurs during the rainy season, from November to April. Flows in many of the smaller streams located in the upper reaches of the watershed are intermittent and start to run dry after the end of the rainy season. Major streams intercept some groundwater in their lower reaches, which allows them to flow all year.

LOCAL DRAINAGE

Novato covers about 28 square miles, of which approximately two percent is water. The topography of Novato ranges from sea level elevation to 1,558 feet above mean sea level (amsl) at the highest point on Burdell Mountain. Downtown is at 18 feet amsl. The annual precipitation level in Novato averages 27.5 inches per year. Ultimately, all surface drainage flows into San Pablo Bay

by overland flow, tributary swales (shallow, vegetated ditches), or perennial streams, such as Novato Creek (City of Novato 2009. pg. 12-6).

The drainage network in Novato consists of a number of lakes, streams, and creeks, including the Petaluma River, Stafford Lake, Novato Creek, Rush Creek and San Pablo Bay (see Figure 3.8-1).

> *Petaluma River*, which originates approximately 20 miles north of the City of Petaluma and discharges into San Pablo Bay. The Petaluma River forms the northeast border of the Novato area. Marshlands along the Petaluma River have been considered for nomination as a federal estuarine sanctuary.
>
> *San Pablo Bay*, which borders the eastern edge of the area. This shoreline extends for approximately seven miles. San Pablo Bay is a navigable waterway that provides access to San Francisco Bay and the Pacific Ocean.
>
> *Novato Creek*, which flows from west to east and bisects the area. The watershed of Novato Creek encompasses the majority of the area, and its drainage basin encompasses 44 square miles. Numerous streams flow into Novato Creek, including Warner Creek, with a 5.1-square-mile drainage; Arroyo Avichi, with a 1.6-square-mile drainage; and Arroyo San Jose, with a 5.7- square-mile drainage.

In addition to these major waterways, numerous local drainage channels and storm drains discharge into Novato Creek and its tributaries. Pacheco Creek flows through the southern part of Novato.

> *Rush Creek*, which flows eastward from Highway 101 to the Petaluma River, north of the City limits.
>
> *Stafford Lake*, a reservoir and headwater for Novato Creek approximately 11 miles upstream from San Pablo Bay. The reservoir, which was established in 1951, stores water for domestic use and reduces flooding along Novato Creek. The reservoir has a storage capacity of 4,430 acre-feet and a water surface area of 245 acres.
>
> Source: City of Novato 2003, Pg. III-2

SURFACE WATER QUALITY

Potential hazards to surface water quality include the following nonpoint pollution problems: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, contaminated street and lawn run-off from urban areas, and warm water drainage discharges into cold water streams.

The most critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams at low flow, resulting in poor dilution of contaminates in the low flowing stream. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels. Besides the greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

The main source of surface water pollution in Novato is nonpoint source pollution. The upland reaches of Novato Creek are impacted by effects of the Novato Creek Dam and by bank and terrace erosion from grazing practices. Novato Creek's middle and lower reaches are heavily urbanized and impacted mainly by urban stormwater runoff (City of Novato 2009, pg. 12-10).

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980's. However, since then, the Federal Environmental Protection Agency has continued to develop implementing rules which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading, vegetation removal, quarrying, logging, and agricultural practices all lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In slower moving water bodies these same factors often cause a buildup of siltation, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affecting both aquatic resources and flood control efforts.

303(d) Impaired Water Bodies: Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

According to the California Water Quality Control Monitoring Council, which is part of California Environmental Protection Agency, Natural Resources, within Marin County there are eight 303(d) impaired waterbodies. Table 3.8-1 identifies waterbodies in Marin County which are listed as impaired, including the pollutant of concern and TMDL status.

TABLE 3.8-1: 303(D) LISTED IMPAIRED WATERBODIES IN MARIN COUNTY

WATERBODY	*AFFECTED AREA*	*POLLUTANT OF CONCERN*	*TMDL STATUS*
Bon Tempe Reservoir	120 acres	Mercury	Not Started
Nicasio Reservoir	829 acres	Mercury	Not Started
Richardson Bay	2,439 acres	Mercury	USEPA approved TMDL
		Polychlorinated Biphenyls (PCBs)	Regional Board adopted TMDL
		Chlordane, DDT, Dieldrin	Completed data collection and analysis
		Dioxin Compounds (including 2,3,7,8-TCDD), Furan Compounds, PCBs (Polychlorinated biphenyls) (dioxin-like)	Completed definition of project and justification
San Francisco Bay, Central	70,992 acres	Mercury	USEPA approved TMDL
		Polychlorinated Biphenyls (PCBs)	Regional Board adopted TMDL
		Chlordane, DDT, Dieldrin	Completed data collection and analysis
		Dioxin Compounds (including 2,3,7,8-TCDD), Furan Compounds, PCBs (Polychlorinated Biphenyls) (dioxin-like)	Completed definition of project and justification
San Pablo Bay	68,349 acres	Mercury	USEPA approved TMDL
		Polychlorinated Biphenyls (PCBs)	Regional Board adopted TMDL
		Chlordane, DDT, Dieldrin	Completed data collection and analysis
		Dioxin Compounds (including 2,3,7,8-TCDD), Furan Compounds, PCBs (Polychlorinated biphenyls) (dioxin-like)	Completed definition of project and justification
Soulajule Reservoir	49 acres	Mercury	USEPA approved TMDL
		Polychlorinated Biphenyls (PCBs)	Not Started
Tomales Bay	8,545 acres	Mercury	Completed compilation of existing information, identified data needs, developed study plans and engaged stakeholders
Walker Creek	16 miles	Mercury	USEPA approved TMDL

SOURCE: CALIFORNIA WATER QUALITY CONTROL MONITORING COUNCIL, CALEPA. 2013

Groundwater

City of Novato is located within the Novato Valley Groundwater Basin which is part of the San Francisco Bay Hydrologic Region. See Figure 3.8-2. The Novato Valley basin occupies a structural depression in the Coast Ranges immediately west of San Pablo Bay and north of San Raphael. San Antonio Creek bounds the Novato Valley basin to the north and the Mendocino Range forms the western and southern boundary. The basin is approximately 32 square miles (20,500 acres) in size. Streams discharging to San Pablo Bay drain the basin and are tidally influenced in the lower reaches. Annual Precipitation in the basin ranges from less than 28 inches adjacent to the bay to more than 40 inches in the upland areas in the Mendocino Range. Natural recharge occurs principally as infiltration from streambeds that exit the upland areas within the drainage basin and from direct percolation of precipitation that falls on the basin floor (DWR 2004, pg. 1).

Groundwater in the area, as measured at different sites within Novato, generally occurs between 1 and 40 feet amsl, depending on the location. Groundwater flow is generally to the northeast with slight variations due north and due east. However, the direction of groundwater flow may be

influenced in some areas by groundwater pumping. The groundwater gradient is fairly flat, ranging from a drop of one foot approximately every 500 lateral feet to 1-foot every 700 lateral feet (City of Novato 2009, pg. 12-8).

GROUNDWATER QUALITY

According to the California Department of Water Resources Bulletin 118, information on groundwater quality in the Novato Valley Basin is limited. With very few wells in the Basin, groundwater testing is scarce. The main cause of groundwater quality impairment is tidal fluctuations in the vicinity of San Pablo Bay which can cause intrusion of brackish water into the groundwater reservoir degrading water quality (DWR 2004, pg. 2). Novato receives its public water supply from the Russian River and Stafford Lake and does not rely on groundwater for any part of its water supply.

TABLE 3.8-2: GROUNDWATER QUALITY IN PUBLIC WELLS

CONSTITUENT GROUP	*NUMBER OF WELLS SAMPLED*	*NUMBER OF WELLS WITH A CONCENTRATION ABOVE AN MCL*
Inorganics – Primary	2	0
Radiological	1	0
Nitrates	2	0
Pesticides	1	0
VOCs and SVOCs	1	0
Inorganics – Secondary	2	0

SOURCE: DWR 2004, PG. 2

Stormwater

The natural drainage network in Novato consists of a number of lakes, streams, and creeks, including the Petaluma River, Stafford Lake, Novato Creek, Rush Creek and San Pablo Bay. The Petaluma River borders the eastern edge of Novato. San Pablo Bay borders the eastern edge of the city. Rush Creek flows north and east from Downtown to the Petaluma River. Stafford Lake is a Novato Creek reservoir located approximately 11 miles upstream of San Pablo Bay. Novato Creek flows from east to west and bisects the city. Several smaller creeks flow into Novato Creek, including Warner Creek, Arroyo Avichi Creek, and Arroyo San Jose Creek.

Novato Creek is the dominant perennial stream in the Novato area, extending about 17 miles from its headwaters at Stafford Lake to San Pablo Bay. This creek, along with its numerous tributaries, including Bowman Creek, Simmons Creek, Vineyard Creek, Warner Creek, and Arroyo Avichi Creek, drains a watershed of approximately 27,500 acres.

Man-made drainage systems within the City of Novato include earthen drainage swales and concrete ditches, 35 major street culverts and 15 bridges, and drainage facilities and basins that are part of City-owned open spaces (City of Novato 2009, pg. 12-8).

The City's Street Division staff routinely inspects these man-made drainage facilities to ensure that proper protective devices, such as grates, are in place, and to remove hazardous debris upstream. Most of the man-made drainage system is inspected and cleaned before, during and after each storm occasion, which helps to reduce local flooding.

Flooding

Flooding events can result in damage to structures, injury or loss of human and animal life, exposure of waterborne diseases, and damage to infrastructure. In addition, standing floodwater can destroy agricultural crops, undermine infrastructure and structural foundations, and contaminate groundwater. Flood zones are geographic areas that the Federal Emergency Management Agency (FEMA) has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

Novato Creek, along with its tributaries such as Warner and Arroyo Avichi Creeks, is a major source of flooding in Novato. Heavy rains occasionally cause flood damage in Novato. Properties upstream of the confluence of Novato, Warner, and Arroyo Avichi Creeks have been particularly susceptible to flooding. Heavy rains in 1980, 1982, 1983, 1986, 1989 and 1998 caused flooding and damage to buildings in these areas. Other areas with high flood danger include Ignacio, Arroyo San Jose, and Vineyard Creeks, as well as much of the bayfront, including the Bahia area. Failure of the Novato Creek Dam, located at Stafford Lake, is another potential source of flooding. This section describes the primary strategies by which the City and other agencies seek to control flooding risks in Novato (City of Novato 2009, pg. 12-11).

The Federal Emergency Management Agency (FEMA) mapping is a guide for the City in planning for flooding events and regulating development within identified flood hazard areas. However, additional locations within the city could be subject to flooding. For example, while flood control projects and regulations have mitigated many serious flood hazards, some areas could still experience flooding due to breakdowns in the existing systems, such as failed levees. In such cases, empirical information about storm events gathered by staff of the Public Works Department and the State Department of Water Resources (DWR) supplements information provided by FEMA.

The current FEMA flood map for the City, FIRM Panel 060178, shown in Figure 3.8-3, show that all but the high-lying areas of the city are classified as Zone A. Zone A is defined as “subject to 100-year flooding with no base flood elevation determined.” The 100-year flood zone is identified as an area that has a 1 percent chance of being flooded in any given year. Areas around lakes and streams in the northwestern and southern parts of the site are listed as occurring within a 500-year flood zone.

DAM INUNDATION

Novato is subject to potential flooding resulting from the failure of the Novato Creek Dam at Stafford Lake. This earthen dam is designed to withstand an earthquake of a magnitude up to 8.25 on the San Andreas Fault. The area that would be inundated in the hypothetical event of a sudden failure of the dam is shown in Figure 3.8-4 (City of Novato 2009, pg. 12-13).

The Novato Creek Dam has a height of 71 feet and a storage capacity (in Stafford Lake) of 4,430 acre-feet. Dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services,

administered by the Marin Sheriff's Office in Marin County, is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

TSUNAMI AND MUDFLOWS

A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides, or volcanic activity. In the deep ocean, the tsunami wave may only be a few inches high. The tsunami wave may come gently ashore or may increase in height to become a fast moving wall of turbulent water several meters high.

According to the California Geological Survey, limited portions of the City along San Pablo Bay may be subject to inundation in the event of a tsunami. Figure 3.8-5 identifies the predicted tsunami inundation area along San Pablo Bay adjacent to Novato. All urbanized areas of the city, including the five AHO sites are outside of the tsunami inundation area.

Mudflows usually occur on steep slopes where vegetation is too sparse to prevent rapid erosion, but they can also occur on gentle slopes under certain conditions. Factors other than slope include heavy precipitation in a short period and easily erodible material. Mudflows are generally not considered a significant threat in Novato, given the relative lack of steep grades and the requirements of the City's Hillside Ordinance to prepare a geotechnical study, identify and mitigate any potential mudflow hazards (City of Novato 2009, pg. 12-13). However, following a significant rain event, there is the potential that portions of the city with steep slopes and sparsely vegetated hillsides could be subject to mudflow hazards.

3.8.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the State and nation, including the Federal Emergency Management Agency, the U.S. Environmental Protection Agency, the State Water Resources Control Board, and the Regional Water Quality Control Board. The following is an overview of the federal, State, and local regulations that are applicable to the proposed project.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. Section 402(p) requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for small MS4s covered under the CWA to efficiently regulate numerous stormwater discharges under a single permit. Permitees must

meet the requirements in Provision D of the General Permit, which require the development and implementation of a Stormwater Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable. The SWMP must include the following six minimum control measures:

1) Public Education and Outreach on Stormwater Impacts

2) Public Involvement/Participation

3) Illicit Discharge Detection and Elimination

4) Construction Site Stormwater Runoff Control

5) Post-Construction Stormwater Management in New Development

6) Redevelopment and Pollution Prevention/Good Housekeeping for Municipal Operations

Federal Emergency Management Agency (FEMA)

Marin County is a participant in the National Flood Insurance Program (NFIP), a Federal program administered by FEMA. Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. Communities are occasionally audited by the Department of Water Resources to insure the proper implementation of FEMA floodplain management regulations.

California Water Code

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region the regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

The Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

"(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

> *(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.*
>
> *(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.*
>
> *(3) A person operating, or proposing to construct, an injection well.*

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge."

National Pollutant Discharge Elimination System (NPDES)

NPDES permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the CWC.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the San Francisco bay Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. The SWRCB has issues general permits for stormwater runoff from construction sites statewide. Stormwater discharges from industrial and

construction activities in the San Francisco Bay Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the San Francisco Bay Region

Per the Porter-Cologne Act, the San Francisco Bay Regional Water Quality Control (RWQCB) is responsible for the development, adoption, and implementation of the Water Quality Control Plan (Basin Plan) for the San Francisco Bay Region. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the San Francisco Bay Region. The Basin Plan identifies beneficial uses of surface waters and groundwater within its region and specifies water quality objectives to maintain the continued beneficial uses of these waters.

The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where they are known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

San Francisco Bay Area Stormwater Management Agency Programs

Discharge of surface runoff generated from the City of Novato contributes to discharges into watercourses which in turn flow into the San Francisco Bay. The San Francisco Bay Area Stormwater Management Agency (BASMA) has a program to assist in the management of stormwater runoff discharged to the San Francisco bay area. The BASMA's program covers a broader area including Marin County, and therefore the City of Novato.

Marin County Stormwater Pollution Prevention Program

All of Marin County, including Novato, is under the jurisdiction of the Marin County Flood Control and Water Conservation District (MCFCWCD), which is responsible for managing stormwater and flooding problems in the County. MCFCWCD also maintains weather monitoring stations, stream gauges and precipitation gauges throughout the County. MCFCWCD is staffed by the Marin County Department of Public Works and is responsible for administering the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) and FEMA Flood Insurance programs.

The goal of MCSTOPPP is to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses in waterways and comply with State and federal regulations. MCSTOPPP submitted a county-wide SWMP to the RWQCB and coordinates consistency between individual SWMPs.

MCFCWCD identifies eight "zones" within the County in order to focus on issues in specific watersheds; Novato is in MCFCWCD's Zone #1. Zone #1 encompasses all of Novato in addition to a sizeable area of unincorporated Marin County. The boundary of Zone #1 is formed by the entire watershed tributary to Rush Creek and Novato Creek.

City of Novato General Plan

The City of Novato General Plan contains the following policies that are relevant to hydrology and water quality aspects of the proposed project:

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 Policy 7 Water Quality. Encourage protection of water resources from pollution and sedimentation, and preserve their environmental and recreation values.

EN Policy 8 Environmentally Sound Flood Control Measures. Encourage flood control measures that retain the natural features and conditions of watercourses to the maximum feasible extent.

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 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 Policy 37 Using CEQA to Reduce Water Quality Impacts. 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.

SF Policy 4 Enhanced Floodwater Storage. Support measures to manage, protect and increase the floodwater storage capacity where appropriate.

SF Policy 5 Use of Updated Flood Rate Insurance Maps. Use the Federal Emergency Management Agency's Flood Insurance Rate Maps [FIRM] to reduce risk of flooding; identify 100-Year Flood Events; and calculate flow rates within identified stream channels.

SF Policy 6 Cooperation with Marin County. Continue to work with the Marin County Public Works Department to minimize negative impacts of storm runoff.

SF Policy 7 Funding Sources. Continue to cooperate with the Marin County Flood Control and Water Conservation District and other Marin jurisdictions in pursuing all available sources of funding to finance improvements to storm drainage facilities.

SF Policy 8 Reducing Flood Hazards. Reduce flood risk by maintaining effective flood drainage systems and regulating construction.

SF Policy 9 Storm Drainage System. Maintain unobstructed water flow in the storm drainage system.

SF Policy 10 Hazards of Dam and Levee Failure. Ensure that the design and location of dams and levees are in accordance with all applicable design standards of the California Division of Safety of Dams.

SF Policy 11 Rising Sea Level. Consider the potential for sea level rise when processing development applications that might be affected by such a rise.

City of Novato Municipal Code

SECTION 5-31: FLOOD DAMAGE PREVENTION REQUIREMENTS.

Municipal Code Section 5-31 establishes regulations for "special flood hazard areas" in Novato. Special flood hazard areas are defined by the flood hazard zones delineated in FEMA's Flood Insurance Rate Maps. Development, designation and subdivision of land within a special flood hazard area require the review and approval of the City Engineer, who must find the land use proposal consistent with specific use regulations and development standards intended to reduce flooding hazards. Standards include elevating a structure's lowest level above the base flood elevation and anchoring structures to prevent lateral movement in case of flooding. These rules apply to new structures and to improvements or repairs totaling 50 percent or more of the value of an existing building.

In order to accomplish its purposes, this section includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Controlling filling, grading, dredging, and other development which may increase flood damage; and
5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

SECTION 5-15: DRAINAGE

Drainage standards are necessary to insure that underground and surface waters are conducted through and away from developments in such a manner as to not detrimentally affect other properties; ensure that underground and surface water is not a problem within the completed development; and further, to correct or improve existing underground or surface water problems within the boundaries of the development and within the immediately affected surrounding area.

Hydrologic Design. Hydrologic design shall be predicated upon ultimate development, as projected by the Novato General Plan, of the tributary watershed. All proposed projects which contain or are contiguous to drainage channels and waterways within the jurisdiction of the Marin County Flood Control and Water Conservation District shall be referred to said district for review and comment. Flood flows to be used for the design of waterways, channels and closed conduits shall accommodate existing flow or have minimum average recurrence intervals as follows, whichever is greater:

a. Major drainage channels shall be designed for an average recurrence of 100 years.

b. Secondary and minor drainage channels shall be designed for an average recurrence interval of 25 years.

SECTION, 7-4: URBAN RUNOFF POLLUTION PROTECTION,
The purpose of this section is to facilitate the health, safety, and general welfare of the City of Novato's citizens by:

a. Minimizing discharges other than storm runoff to storm drains or watercourses.

b. Controlling the discharge to storm drains or watercourses from spills, dumping, or disposal; of materials other than rain water; and

c. Reducing pollutants in storm water discharges to the maximum extent practicable.

The intent of this section is to protect and enhance the water quality of the State's and the nations water courses, water bodies and wetlands in a manner pursuant to and consistent with the Clean Water Act.

SECTION 19.16.050: FLOOD HAZARD (F) OVERLAY DISTRICT
Zoning Code Section 19.16.050 establishes a Flood Hazard (F) Overlay District in Novato. The purpose of this district is to "protect people and property from flood hazard risks by appropriately regulating development and land uses within an F overlay district." The (F) Overlay District limits land uses permitted in primary and secondary floodways and requires studies and mitigation for development proposed within a 100-year flood plain.

SECTION 19.35: WATERWAY AND RIPARIAN PROTECTION
Section 19.35 of the Zoning Code establishes buffer areas along watercourses to protect water quality, minimize flood hazards and maintain or expand storage capacity for flood waters. Section 19.35 establishes a "stream protection zone" that includes the stream bed, the stream banks, all riparian vegetation and a buffer zone at least 50 feet wide, measured from the top of the channel bank. The stream protection zone may be expanded or reduced based on specific site conditions. Any proposed development, grading, fill, planting, or vegetation removal requires a use permit. In order to obtain a use permit, an applicant must submit a Stream Management Plan and incorporate annual maintenance requirements into the project.

Local Drainage Master Plan

To accommodate 25-year flood flows, the City has implemented a Local Drainage Master Plan for improving storm drains. A detention pond has been constructed at Deer Island (located on the

northern portion of Deer Creek in eastern Novato), and improvements have also been made to the channels of Novato Creek, Warner Creek, and Arroyo Avichi Creek.

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- Inundation by seiche, tsunami, or mudflow.

IMPACTS AND MITIGATION

Impact 3.8-1: Violate water quality standards or waste discharge requirements (Less than Significant)

As shown in Table 2.0-1 in the Project Description, the Draft Housing Element includes a wide range of implementation programs that will assist the City in meeting the goals established in the Draft Housing Element Update. The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to water quality standards or waste discharge requirements. For example, HO Program 1.A calls for public outreach efforts to expand the public's understanding of the Housing Element and available programs and opportunities within the Housing Element. HO Program 2.A requires the inclusion of non-discrimination clauses in rental housing and deed-restricted housing constructed with City assistance. While these types of implementation programs are critical to the success of the Draft Housing Element, they would not result in any physical changes to the environment, and as such, have no potential to result in impacts related to hydrology and water quality. This is true for HO Programs 1.A, 1.B, 1.C, 2.A, 2.B, 3.A, 3.B, 4.A, 4.B, 5.A, 5.B, 5.C, 5.D, 5.E, 5.F, 5.G, 5.H, 5.I, 5.J, 5.K, 6.A, 6.B, 6.C, 7.A, 7.B, 7.C, 7.D, 7.E, 7.F, 8.A, 8.B, 9.C, 9.D, 9.F, 9.G, 9.H, 9.I, 10.A, 11.A, 12.B, 12.C, 12.D, 12.E, 13.A, 13.B, 13.C, 14.A, 14.B, 14,C, 15.A, and 15.B. Below is a discussion of the policies and programs of the Draft Housing Element which are relevant to Impact 3.8-1.

Some of the programs in the Housing Element would expand the permitted uses on a site. For example, HO Program 12.A calls for the adoption of an ordinance allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks without a conditional use or other discretionary permit. This change in permitted use for emergency shelters would not result in impacts related to hydrology and water quality, since all structures converted or constructed for this purpose would be required to implement all applicable water quality standards implemented by the Regional Water Quality Control Board and the Marin County Flood Control and Water Conservation District, and this program would not allow for new development in areas of the City that have not been previously developed with urban uses.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with hydrology and water quality. The analysis below provides a discussion regarding the potential for hydrology and water quality impacts to result from the future development of the five AHO sites.

Construction-Related Water Quality Impacts: Construction activities would consist of substantial grading and vegetation removal activities, which would increase soil erosion rates on the areas proposed for development. In addition, the compaction of soils by heavy equipment could reduce the infiltration capacity of the soils thereby increasing the runoff and erosion potential. If uncontrolled, the soil materials could result in engineering problems, blockage of drainage channels, and downstream sedimentation. Vegetation removal and earth-moving activities associated with construction may have the greatest potential for detrimental impacts to surface water quality and the removal of vegetation during construction could expose site soils to

rainsplash, sheetflow and gullying erosion prior to successful revegetation. The cleared, exposed surfaces and soil stockpiles created during construction could create sedimentation in downstream waters. Fuels, lubricants, and other toxic materials used during construction could also potentially enter surface waters. As required by the Clean Water Act, each phase of construction requires an approved Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices for grading, and preservation of topsoil. The project proponent or contractor is required to submit the SWPPP with a Notice of Intent to the Regional Water Quality Control Board (RWQCB) to obtain a General Permit. The RWQCB is an agency responsible for reviewing the SWPPP with the Notice of Intent, prior to issuance of a General Permit for the discharge of stormwater during construction activities.

Operational Water Quality Impacts: Development of future housing in the city would result in new impervious areas associated with roadways, driveways, parking lots, buildings, and landscape areas. Normal activities in these developed areas include the use of various automotive petroleum products (i.e. oil, grease, fuel), household hazardous materials, heavy metals, pesticides, herbicides, fertilizers, and sediment. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of uses, and density of people.

The City of Novato General Plan has a number of policies which assist in the protection of water quality during the construction and operation of a housing project. Environment Chapter Policy 4 calls for the minimization of soil disturbance and surface runoff in the Stream Protection Zones. Environment Chapter Policy 7 calls for the protection of water resources from pollution and sedimentation and preservation of the environmental and recreations values of such resources. Environment Chapter Policy 35 calls for the minimization of the effects of pollution in stormwater runoff and the retention and restoration of the natural hydrological characteristics of watersheds in the Novato area. Environment Chapter Policy 36 prohibits discharges of any substances other than stormwater and seeks to prevent illicit dumping of wastes into storm drains and creeks. Environment Chapter Policy 37 requires the use of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion, sedimentation, and urban runoff pollution resulting from development.

All housing developed as a result of implementation of the Housing Element would be subject to the provisions of the Novato Municipal Code regulating water quality and riparian protection. Section 5-15 applies to all proposed projects which contain or are contiguous to drainage channels and waterways within the jurisdiction of the Marin County Flood Control and Water Conservation District (MCFCWD). MCFCWD is responsible for administering the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) and FEMA Flood Insurance programs. The goal of MCSTOPPP is to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses in waterways and comply with State and federal regulations. MCSTOPPP submitted a county-wide SWMP to the RWQCB and coordinates consistency between individual SWMPs. All proposed projects which contain or are contiguous to drainage channels and waterways within the jurisdiction of the Marin County Flood Control and Water Conservation District shall be referred to said district for review and comment. Flood flows to be used for the design of waterways, channels and closed conduits shall accommodate existing flow or have minimum average recurrence intervals as follows, whichever is greater:

a. Major drainage channels shall be designed for an average recurrence of 100 years.

b. Secondary and minor drainage channels shall be designed for an average recurrence interval of 25 years.

Novato Municipal Code Section 5-31 establishes regulations for "special flood hazard areas" in Novato. Development, designation and subdivision of land within a special flood hazard area requires the review and approval of the City Engineer, who must find the land use proposal consistent with specific use regulations and development standards intended to reduce flooding hazards. This provision also minimizes the potential for erosion and protects natural stream channels thereby reducing the potential for water quality degradation. Novato Municipal Code Section 7-4 establishes standards and procedures that are intended to prevent or minimize discharges other than storm runoff to storm drains or watercourses. Section 7-4 requires discharges to comply with the National Pollution Discharge Elimination System (NPDES). Novato Zoning Code Section 19.35, Waterway and Riparian Protection, establishes a "stream protection zone" that includes the stream bed, the stream banks, all riparian vegetation and a buffer zone of 50 feet wide, measured from the top of the channel bank. The provisions of Section 19.35 are applied to new development to protect water quality, minimize flood hazards and maintain or expand storage capacity for flood waters.

Compliance with the policies of the Novato General Plan and implementation of the various municipal code sections described above would ensure that water quality is not compromised by the development of new housing units to meet the Housing Element goals. These policies and the standards of the noted sections of the Novato Municipal Code are uniformly applied to all new construction projects in Novato through the City's design review and building permit processes. Accordingly, a proposal to construct multi-family residential units on any of the five AHO sites would be reviewed by the City and other regulatory agencies (e.g., Regional Water Quality Control Board, Marin County Flood Control and Water Conservation District) at the time of design review and then subsequently during the building permit phase for consistency with the noted policies and standards prior to construction. Consequently, impacts to water quality are considered **less than significant**.

See also the discussion for Impact 3.5-2 with regarding erosion and the loss of topsoil.

Impact 3.8-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge (Less than Significant)

(*Note: The following discussion is associated with potential impacts of the proposed project on groundwater as it relates to stormwater infiltration and groundwater recharge. Depletion of groundwater supplies as it relates to water usage is addressed in Section 3.14*.)

The City of Novato is located within the Novato Valley Groundwater Basin which is part of the San Francisco Bay Hydrologic Region. San Antonio Creek bounds the Novato Valley basin to the north and the Mendocino Range forms the western and southern boundary. Streams discharging to San Pablo Bay drain the basin and are tidally influenced in the lower reaches. Natural recharge occurs principally as infiltration from streambeds that exit the upland areas in the Mendocino Range and from direct percolation of precipitation that falls on the basin floor.

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to groundwater supplies or groundwater recharge. The discussion under Impact 3.8-1 above, identifies which Draft Housing Element

programs are relevant to the analysis of hydrology and water quality, and identifies which programs have no relevance to this environmental topic.

The Housing Element includes numerous programs supporting the development of a range of housing types and densities in Novato. While the Housing Element does not permit a specific development project, its implementation could nonetheless lead to the development of new residential units in Novato, in particular at the five identified AHO sites, resulting in construction activities with the potential to interfere with groundwater recharge or impact groundwater supplies. This is an indirect impact of adoption of the Housing Element.

Programs 9.B and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with groundwater resources or groundwater recharge.

As discussed in Section 3.14, the City does not use groundwater as a source of public water. The development of housing units at the five AHO sites would not affect the groundwater supply in the basin.

The proposed project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

Development of housing related to Program 9.B would convert two sites (Site 3 (Redwood Boulevard) and Site 4 (7506 Redwood Boulevard)), totaling approximately 5.76 acres of land that is currently vacant, into urban uses including new impervious surfaces. All other sites associated with Program 9.B are developed with existing impervious surfaces. AHO Site 1, which includes approximately 2.14 acres and a developable area of 1.75 acres, is currently developed with a day care facility. There are currently two buildings and paved parking on the site. Novato Creek traverses the western and southern border of the site. The southern and western areas, as well large area in the central portion of the site, are undeveloped and provide lawn and playground space for the day care facility. These portions of the site, which are less than one acre, currently provide permeable surfaces on the site. Therefore, the creation of housing on these currently developed sites (Sites 1, 2, and 5) would create very small (less than one acre) new areas of impervious surfaces and negligibly change current groundwater recharge rates on these sites. There are two AHO sites that are currently vacant, Site 4 is 1.76-acres in size and Site 3, is 4-acres in size and is located within a larger 39.92 acre parcel..

The Novato Valley Basin aquifer comprises an area of about 20,500 acres. Natural groundwater recharge primarily occurs as infiltration from streambeds that exit Novato's upland areas and from direct percolation of precipitation that falls on the water basin floor. The Housing Element does not contemplate the development of multi-family residential units within any streambed. As such, the project would not impact this particular recharge area. However, the development of AHO Sites 1, 3 and 4 with multi-family residential units would add impermeable surfaces within the

water basin floor, including roof areas and parking lots. Assuming these sites are fully covered by impermeable surfaces, the floor of the Novato water basin would lose approximately 0.03 percent of its total surface area.. This potential incremental increase in impermeable surface is considered to be insignificant given the size of Novato's water basin and the relatively low density and coverage level of existing development. Based on these observations, the project would not substantially interfere with groundwater recharge

For these reasons, the Project would not cause the depletion of groundwater supplies or interfere substantially with groundwater recharge. As such, implementation of the Housing Element would have a **less than significant** impact regarding this issue.

Impact 3.8-3: Substantially alter the existing drainage pattern in a manner which would result in substantial erosion or siltation, result in flooding on- or off-site, or create or contribute runoff in excess of the capacity of stormwater drainage systems (Less than Significant)

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to drainage, erosion or flooding. The discussion under Impact 3.8-1 above, identifies which Draft Housing Element programs are relevant to the analysis of this environmental topic, and identifies which programs have no relevance to this environmental topic.

The Housing Element includes numerous programs supporting the development of a range of housing types and densities in Novato. While the Housing Element does not permit a specific development project, its implementation could nonetheless lead to the development of new residential units in Novato, in particular at the five identified AHO sites, resulting in construction activities with the potential to alter the existing drainage patterns of a site that could lead to erosion, siltation, flooding, or an increase in stormwater runoff. This is an indirect impact of adoption of the Housing Element.

Programs 9.B, and 9.E of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by expanding the allowed land uses to include multi-family housing, with the potential for density bonuses, as described in Chapter 2.0, Project Description. Future multi-family development on these housing sites could result in impacts associated with drainage, erosion and flooding.

Three of the AHO sites have existing urban uses with existing storm drainage infrastructure in place (Sites 1 (1787 Grant Avenue), 2 (Landing Court), and 5 (1905 Novato Boulevard). Changing the existing developed uses on these sites to housing would not significantly change the drainage characteristics of the sites, would not result in significant changes to stormwater runoff or volumes on these sites and is therefore not expected to exceed the existing capacity or alter the existing functionality of the stormwater drainage system already adequately serving these sites. Of the other two sites, Site 4 (7506 Redwood Blvd.) is in a fully developed portion of downtown Novato. Site 4 is essentially flat, and development of this site would not result in the altering of the surrounding drainage pattern. Runoff from this site would flow into the City's existing storm drainage system. As described below, prior to approval of any future development on this site, the project proponent must implement the requirements of Novato Municipal Code, Section 5-15,

which includes detailed and site-specific drainage standards and requirements. These site-specific drainage requirements would ensure that stormwater generated on the project site would not exceed the capacity of the existing stormwater drainage infrastructure in the vicinity of the site, and would further ensure that project implementation would not result in on- or off-site flooding impacts. Site 3 (Redwood Blvd/Black John Road) would provide for the development of 4 acres of a 39.92-acre site. The designated four acres of the site to be assigned the Affordable Housing Overlay has been located adjacent to Redwood Boulevard just north of the site's southern access in a relatively flat area largely void of trees and an established drainage area.

The City of Novato General Plan has a number of policies which assist in the protection of the City against potential flooding as a result of changing the existing drainage on a site. Environment Chapter Policy 4 calls for the minimization of soil disturbance and surface runoff in Stream Protection Zones. Environment Chapter Policy 8 calls for flood control measures that retain the natural features and conditions of watercourses to the maximum feasible extent. Environment Chapter Policy 35 calls for the minimization of the effects of pollution in stormwater runoff and retains and restores the natural hydrological characteristics of watersheds in the Novato Area of Interest. Environment Chapter Policy 37 requires the use of the California Environmental Quality Act (CEQA) process to identify measures to prevent erosion, sedimentation, and urban runoff pollution resulting from development. Safety and Noise Chapter Policy 8 calls for the reduction of flood risk by maintaining effective flood drainage systems and regulating construction. Safety and Noise Policy 9 requires the maintaining of an unobstructed water flow in the storm drainage system.

All housing developed as a result of implementation of the Housing Element would be required to comply with the provisions of the Novato Municipal Code regulating storm drainage protection. Section 5-15 requires all proposed projects which contain or are contiguous to drainage channels and waterways within the jurisdiction of the Marin County Flood Control and Water Conservation District (MCFCWD) to implement specified on-site flood control and drainage improvement measures. MCFCWD is responsible for administering the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) and FEMA Flood Insurance programs. The goal of MCSTOPPP is to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses in waterways and comply with State and federal regulations. MCSTOPPP submitted a county-wide stormwater management plan (SWMP) to the RWQCB and coordinates consistency between individual SWMPs. Prior to approval of any future development on any of the housing opportunity sites, the project proponent must implement the requirements of Novato Municipal Code, Section 5-15, which includes detailed and site-specific drainage standards and requirements. These site-specific drainage requirements would ensure that stormwater generated on the project site would not exceed the capacity of the existing stormwater drainage infrastructure in the vicinity of the site, and would further ensure that project implementation would not result in on- or off-site flooding impacts.

Municipal Code Section 5-31 establishes regulations for "special flood hazard areas" in Novato. Development, designation and subdivision of land within a special flood hazard area requires the review and approval of the City Engineer, who must find the land use proposal consistent with specific use regulations and development standards intended to reduce flooding hazards. Any development proposals on the identified housing opportunity sites must submit detailed engineering plans that depict building pad heights, measures to prevent impacts associated with flood damage, and site-specific drainage plans that show how flood waters would be conveyed

and detained in such as way as to not result in impacts to on- or off-site land uses. This provision also minimizes the potential for erosion and protects natural stream channels thereby reducing the potential for water quality degradation. Municipal Code Section 7-4 calls for the minimization of discharges other than storm runoff to storm drains or watercourses, requires the control of discharges to storm drains or watercourses from spills, dumping, or disposal of materials other than rain water; and strives to reduce pollutants in storm water discharges. Section 19.35 establishes a "stream protection zone" that includes the stream bed, the stream banks, all riparian vegetation and a buffer zone at least 50 feet wide, measured from the top of the channel bank. This code was implemented to protect water quality, minimize flood hazards and maintain or expand storage capacity for flood waters.

The policies in the Novato General Plan and the various municipal codes describe above would assure that flooding would not result because of a change in the existing drainage pattern from construction of new housing units developed to meet the Housing Element goals. Consequently, impacts related to drainage and flooding are considered **less than significant**.

Impact 3.8-4: Otherwise substantially degrade water quality (Less than Significant)

Water Quality Impacts from Discharges to 303(d) Listed Water Bodies: Section 303(d) of the federal Clean Water Act (CWA) requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

There are eight 303(d) impaired water bodies in Marin County. Under the CWA listing, these impaired water bodies have no remaining assimilative capacity or ability to accommodate additional quantities of these contaminants, irrespective of concentration. Projects are required to comply with requirements of approved TMDLs, as regulated in the region by the RWQCB through issuance of Waste Discharge Requirements and NPDES permit amendments.

As discussed under Impacts 3.8-1 and 3.8-3, the City has a number of General Plan policies and municipal codes designed to protect water quality. Additionally, development in Novato is subject to the Marin County Stormwater Pollution Prevention Program. As a result, implementation of the Housing Element would have a **less than significant** impact.

Impact 3.8-5: Place housing or structures within a 100-year flood hazard area or impede/redirect flows within a 100-year flood hazard area as mapped on a flood hazard delineation map (less than significant)

While some of the programs in the Housing Element would expand the permitted uses on a site (such as allowing an emergency shelter as a permitted use in the Hamilton and Ignacio Industrial Parks, permitting single room occupancy units in the Mixed Use, R10, and R20 zoning districts, requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts) as described in Chapter 2.0, these programs would not change the location of allowed urban uses or significantly increase the intensity of future development, except as described below for Program 9.B, and are not expected

to result in new impacts associated with the 100-year flood hazard area not previously considered in Novato General Plan environmental documentation.

The majority of the implementation programs in the Draft Housing Element would not result in any environmental impacts, particularly impacts related to the 100-year flood hazard area. The discussion under Impact 3.8-1 above, identifies which Draft Housing Element programs are relevant to the analysis of this environmental topic, and identifies which programs have no relevance to this environmental topic.

Program 9.B of the Housing Element would increase the development potential on the five Affordable Housing Overlay (AHO) sites by redesignating the allowed land uses to include multifamily housing as described in Chapter 2.0, Project Description. The increase in development density and intensity on these housing sites could result in impacts associated with the 100-year flood hazard area, as these sites were not considered for multifamily housing development in the General Plan.

As shown in Table 3.8-3 and on Figure 3.8-3, portions of Site 1 (1787 Grant Avenue) and all of Site 5 (1905 Novato Boulevard) are located within the AO Flood Hazard Zone as mapped on the FEMA Flood Insurance Rate Map. Portions of Site 1 are also in the AE zone and with the majority of the site in the X Shaded flood zone. Site 4 (7506 Redwood Boulevard) is in the X shaded flood zone. The remaining sites are located in the X unshaded zone.

TABLE 3.8-3: FEMA FLOOD ZONE DESIGNATIONS

SITE	FLOOD ZONE	FEMA PANEL
Site 1 (APN 141-201-48, 141-201-12)	AE, AO and X Shaded	06041C0277D
Site 2 (APN 153-162-59)	X Unshaded	06041C0277D
Site 3 (APN 125-202-18)	X Unshaded	06041C0277D
Site 4 (APN 143-011-08)	X Shaded	06041C0175D
Site 5 (APN 140-011-66)	AO	06041C0277D

ZONE	*DESCRIPTION*
MODERATE TO LOW RISK AREAS	
X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
HIGH RISK AREAS	
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
AO	River or stream flood hazard areas and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.

Source: FEMA

While Sites 1 through 5 have been identified for urban development as part of the General Plan, development of these sites with multifamily uses would result in increased impervious surfaces. Increased site runoff could be generated in association with greater densities. As several of the sites are located within a floodplain, the increase in runoff could affect flooding both on and off-site.

The Novato General Plan includes several policies designed to reduce potential flooding impacts in the City. SF Policy 4 encourages the City to support measures to manage, protect and increase the floodwater storage capacity. SF Policy 5 calls on the City to use the Federal Emergency Management Agency's Flood Insurance Rate Maps [FIRM] to reduce risk of flooding; identify 100-Year Flood Events; and calculate flow rates within identified stream channels. SF Policy 8 calls for the reduction of flood risk by maintaining effective flood drainage systems and regulating construction.

Section 5-31 of the Novato Municipal Code requires review by the City Engineer for properties within a flood zone and provides standards for the protection of structures built within these flood zones. Zoning Code Section 19.16.050 established a Flood Hazard (F) Overlay District in Novato. The purpose of this district is to "protect people and property from flood hazard risks by appropriately regulating development and land uses within an F overlay district." The (F) Overlay District limits land uses permitted in primary and secondary floodways and requires studies and mitigation for development proposed within a 100-year flood plain. None of the AHO sites are within a flood overlay district. SF Policy 9 calls for maintaining the storm drainage system in order to provide an unobstructed water flow into the system. This policy reduces the potential for flooding by allowing drainage to flow freely into the storm drainage system. The City's Local Drainage Master Plan provides guidance to maintain and improve the City's storm drainage system. Section 19.35 of the Zoning Code also reduces the potential for flooding by establishing a stream protection zone which requires a 50 foot buffer zone.

As with all properties in the city, housing developed as a result of implementation of the Housing Element would be subject to policies in the General plan designed to protect persons and property from flooding. Additionally, all properties in the city are subject to the regulations and standards of the Novato Municipal Code. Compliance with these policies standards and regulations reduce the potential for flooding impacts. As a result, implementation of the Housing Element would have a **less than significant** impact regarding flooding.

Impact 3.8-6: Expose people or structures to a significant risk of loss, injury or death involving flooding including as a result of the failure of a dam (Less than Significant)

A portion of the City lies within the Novato Creek Dam at Stafford Lake inundation area as shown in Figure 3.8-4. The Novato Creek Dam is an earthen dam designed to withstand an earthquake of a magnitude up to 8.25 on the San Andreas Fault.

As shown in Figure 3.8-4, four of the five AHO sites are within the dam inundation area for Stafford Lake. Site 3 (Redwood Boulevard/Black John Road) is not within the inundation area and therefore there is no risk of flooding to this site as a result of dam failure.

Dam failure is generally a result of structural instability caused by improper design or construction, instability resulting from seismic shaking, or overtopping and erosion of the dam. Larger dams that are higher than 25 feet or with storage capacities over 50 acre-feet of water are regulated by the California Dam Safety Act, which is implemented by the California Department of Water Resources, Division of Safety of Dams (DSD). The DSD is responsible for inspecting and monitoring these dams. The Novato Creek Dam has a height of 71 feet and a storage capacity (in Stafford Lake) of 4,430 acre-feet, and is therefore subject to DSD regulations, inspections, and monitoring.

The Act also requires that dam owners submit to the California Office of Emergency Services inundation maps for dams that would cause significant loss of life or personal injury as a result of dam failure. The County Office of Emergency Services, administered by the Marin Sheriff's Office in Marin County, is responsible for developing and implementing a Dam Failure Plan that designates evacuation plans, the direction of floodwaters, and provides emergency information.

Regular inspection by DSD and maintenance by the dam owners ensure that the dams are kept in safe operating condition. DSD generally inspects all dams under their jurisdiction once per year. The Novato Creek Dam was last inspected by DSD on March 21, 2012, and the DSD inspection report was completed on April 3, 2012. The DSD inspection report concluded that from the known information and the visual inspection, the dam, reservoir, and the appurtenances are judged safe for continued use. As such, failure of the Novato Creek Dam is considered to have an extremely low probability of occurring and is not considered to be a reasonably foreseeable event. As a result, implementation of the Housing Element would have a **less than significant** impact regarding flooding due to dam failure.

Impact 3.8-7: Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow (Less than Significant)

A tsunami is a sea wave caused by a submarine earthquake, landslide, or volcanic eruption. Tsunami can cause catastrophic damage to shallow or exposed shorelines. According to the California Geological Survey, limited portions of the City along San Pablo Bay may be subject to inundation in the event of a tsunami. Figure 3.8-5 identifies the predicted tsunami inundation area along San Pablo Bay adjacent to Novato. All urbanized areas of the city, including the five AHO sites, are outside of the tsunami inundation area.

Seiches are changes or oscillations of water levels within a confined water body. Seiches are caused by fluctuation in the atmosphere, tidal currents or earthquakes. The effect of this phenomenon is a standing wave that would occur when influences by the external causes. The city is not near any isolated bodies of water, and thus is not subject to inundation by seiche or seismically-induced waves in lakes and reservoirs.

A mudflow is a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity. Mudflow events are caused by a combination of factors, including soil type, soil profile, precipitation, and slope. Mudflow may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. As a result of this super-saturation, soil and rock materials become unstable and eventually slide away from their existing location. Soils most susceptible to mudflow are saturated, loose, non-plastic, uniformly graded, and fine-grained sand deposits.

Mudflows usually occur on steep slopes where vegetation is too sparse to prevent rapid erosion, but they can also occur on gentle slopes under certain conditions. Mudflows are not considered a significant threat in Novato, given the relative lack of steep grades and the requirements of the City's Hillside Ordinance to prepare a geotechnical study, identify and mitigate any potential mudflow hazards (City of Novato 2009, pg. 12-13). However, following a significant rain event, there is the potential that portions of the city with steep slopes and sparsely vegetated hillsides could be subject to mudflow hazards.

Sites 1, 2, 4, and 5 are located in areas of the city that are relatively flat, and would not be exposed to potential mudflow hazards. Site 3 (Redwood Boulevard and Black John Road) consists of a 4-acre area of a larger 39.92-acre parcel. Site 3 is relatively flat and hosts a single oak tree, but is surrounded by hills and ridgelines with native tree cover, grassland, and natural drainage courses. Areas to the north of Site 3 have experienced small-scale slope failure in the past. These slope failures have generally impacted areas smaller than one acre, and have not resulted in mudflows or debris flows within several hundred feet of Site 3. Additionally, the small-scale slope failures that have occurred north of Site 3 have resulted in low-volumes of debris flow to the east and southeast, away from the location of Site 3. Any future development on the remainder of the 39.92-acre parcel where Site 3 is located would require additional site and project specific geotechnical investigations and need to demonstrate compliance with the requirements of the City's Hillside and Ridgeline Preservation Ordinance (Novato Municipal Code Division 19.26). Compliance with these measures would ensure that any future development would not expose or increase the potential for landslides or mudflows in the vicinity of Site 3. For these reasons, implementation of the Housing Element would result in a **less than significant** impact to this topic.

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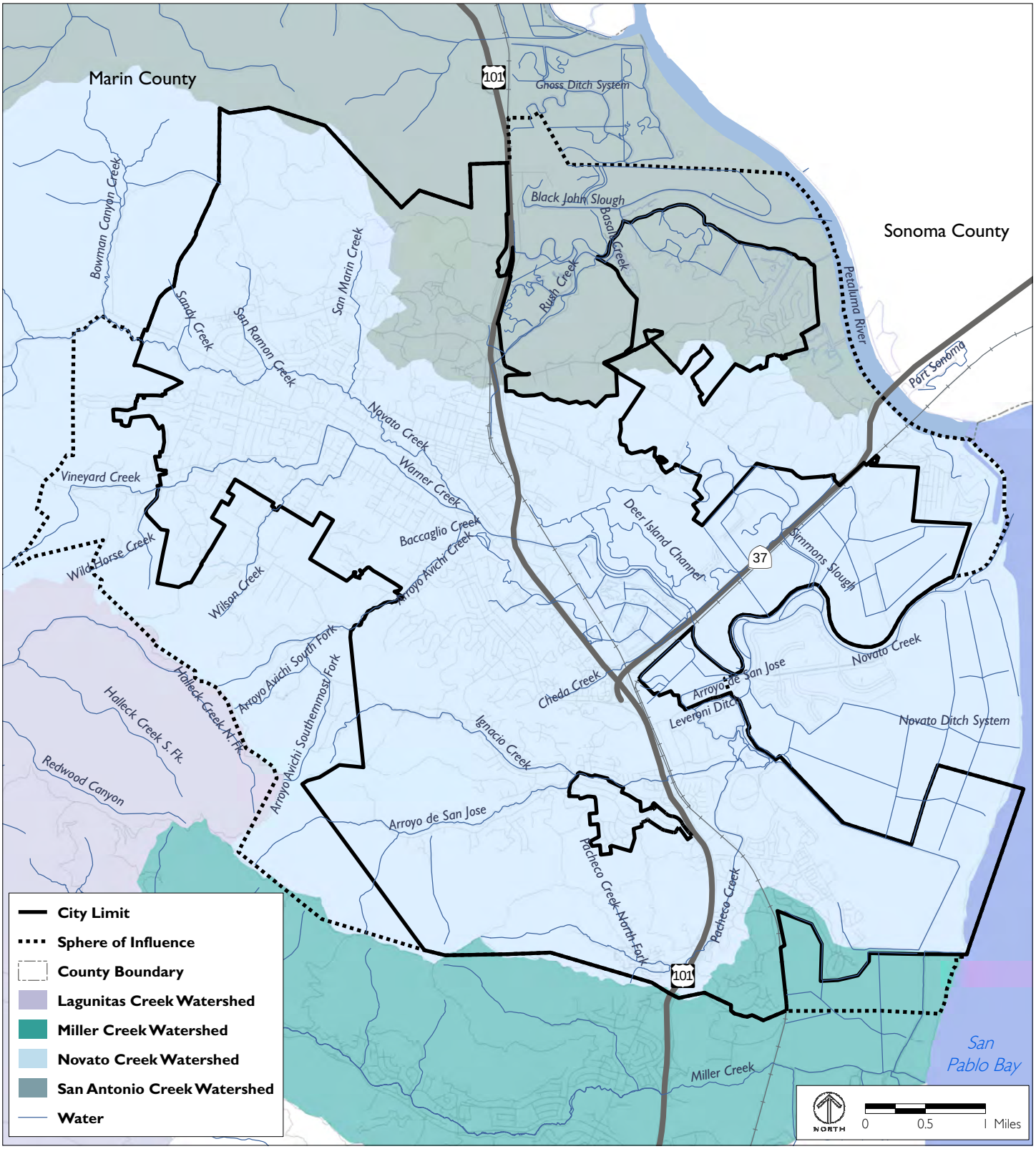
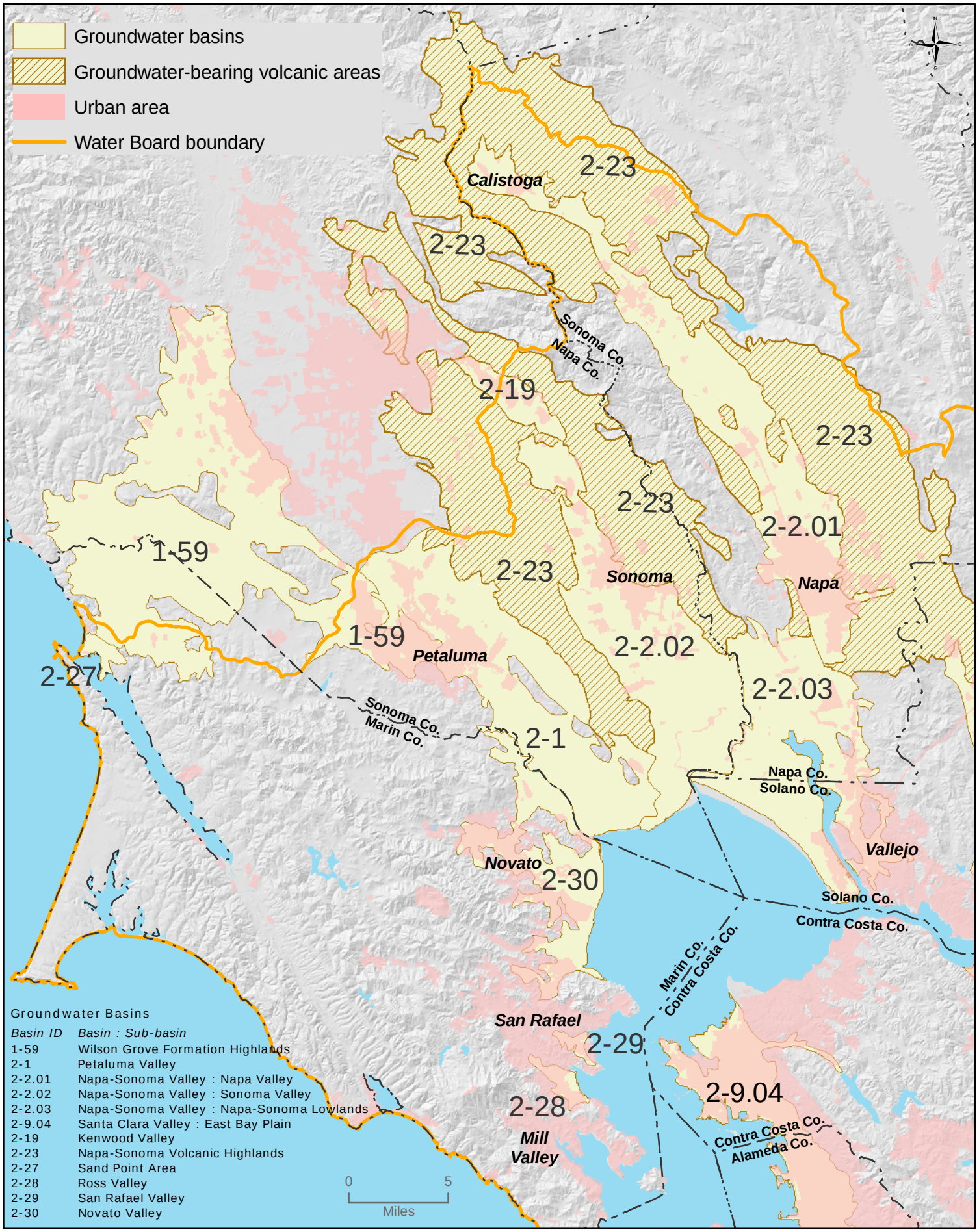


CITY OF NOVATO HOUSING ELEMENT EIR

Figure 3.8-1: Watersheds and Waterbodies

Source: Marin County, GIS.



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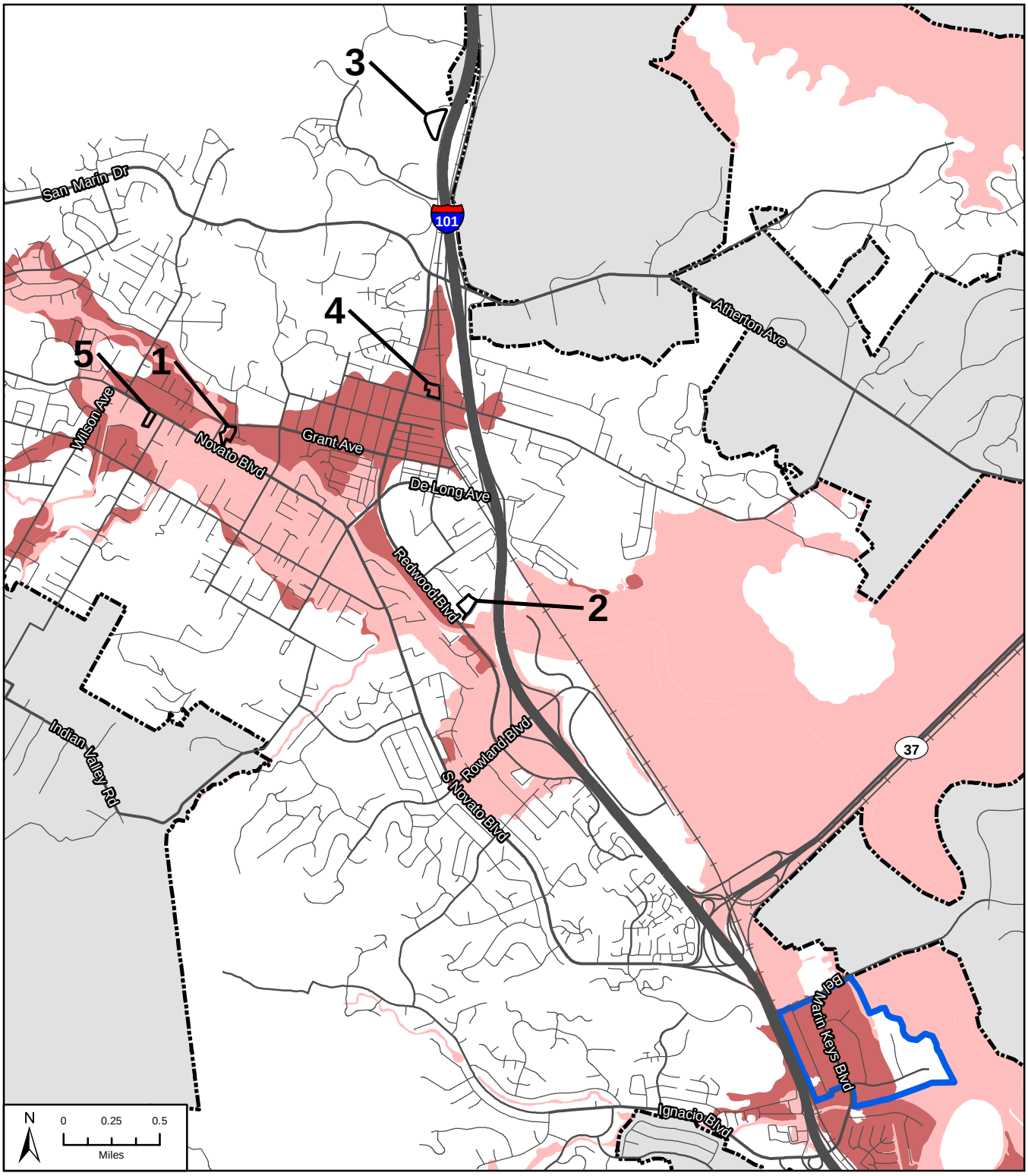
CITY OF NOVATO HOUSING ELEMENT EIR

Figure 3.8-2: Groundwater Basins



FEMA Flood Hazard Zone

100-year flood zone

500-year flood zone

Affordable Housing Overlay Sites (1-5)

Hamilton and Ignacio Industrial Parks

City of Novato

Data sources: FEMA; Marin County GIS; City of Novato GIS. Map date: June 19, 2013.

CITY OF NOVATO HOUSING ELEMENT

Figure 3.8-3: Flood Hazard Zones

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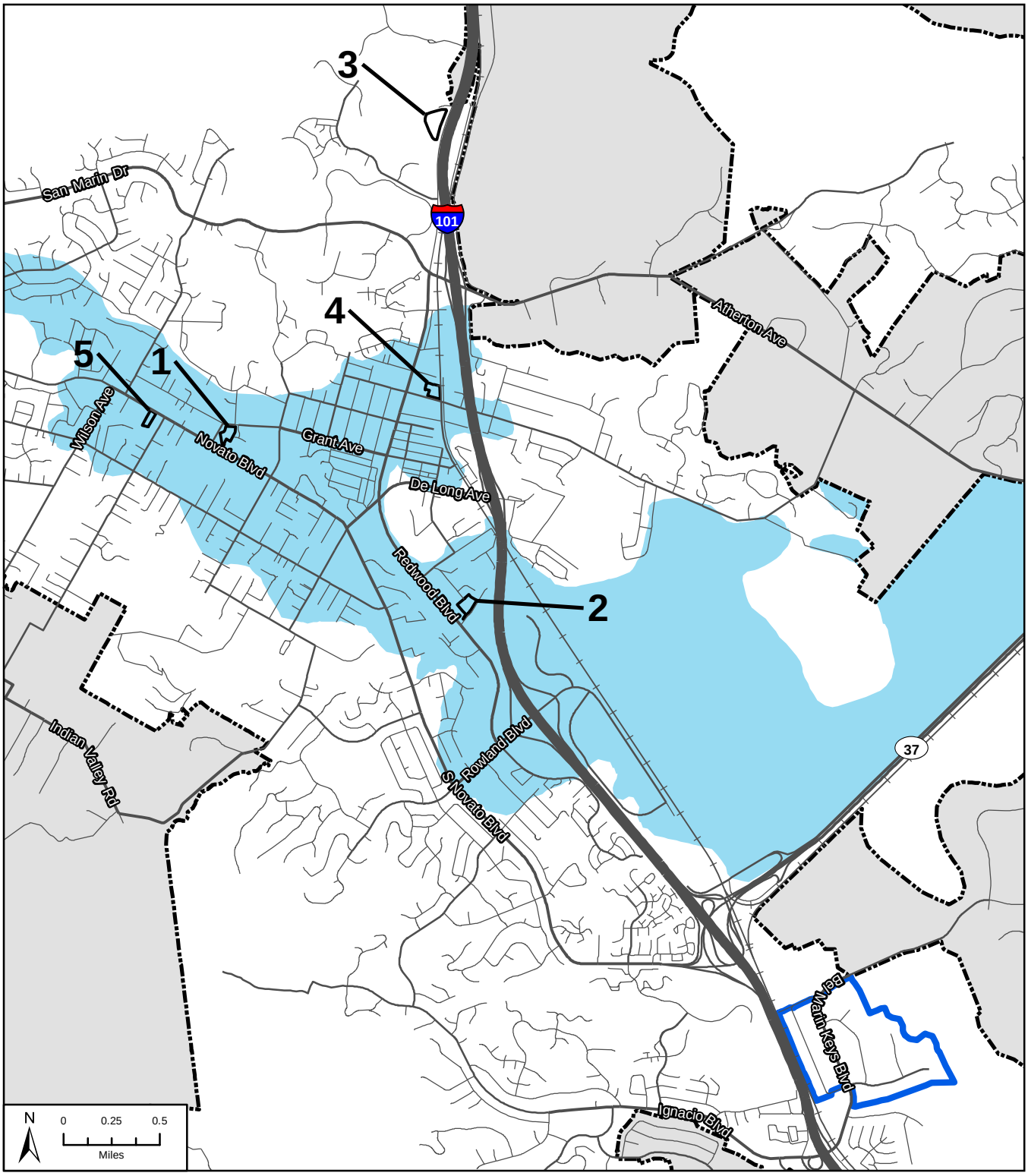


CITY OF NOVATO HOUSING ELEMENT

Figure 3.8-4: Stafford Lake Dam Inundation Area

Dam Inundation Area

City of Novato

Affordable Housing Overlay Sites (1-5)

Hamilton and Ignacio Industrial Parks

Data sources: Marin County GIS; City of Novato GIS. Map date: June 19, 2013.

The purpose of this EIR section is to address at a programmatic level the consistency of the proposed amendments to the Housing Element with applicable local land use and planning regulations and policies. This chapter will also identify the existing land use conditions and the surrounding areas and analyze the project's consistency with relevant planning documents and policies adopted for the purpose of avoiding or mitigating an environmental effect, and recommend mitigation measures to avoid or minimize the significance of potential environmental impacts. General Plan policies associated with other specific environmental topics (aesthetics, air quality, agriculture, biological resources, cultural resources, geology/soils, greenhouse gas, hazards, hydrology/water quality, noise, population/housing, public services, recreation, transportation, and utilities) are discussed in the relevant sections of this EIR.

Information in this section is based on information provided by the City of Novato, including the *Revised Draft Housing Element (*City of Novato 2013), site visits conducted by De Novo Planning Group in 2013, ground and aerial photographs, and the following reference documents: *City of Novato General Plan – Revision October 9, 2007* (City of Novato 2007), *Existing Conditions Report* (City of Novato 2009), *Environmental Review Guidelines (*City of Novato 2000), *Novato Zoning Ordinance* - Chapter 19 of the Novato Municipal Code (City of Novato 2013), City of Novato *Downtown Specific Plan (1998)*, the *Novato Industrial Park Precise Development and Master Plan* (City of Novato 1983), and *1989 Airport Master Plan* (Marin County 1997).

3.9.1 ENVIRONMENTAL SETTING

EXISTING CONDITIONS

Existing land use in Novato is predominantly single-family residential, located in the valley areas west of Highway 101 and along the San Pablo Bay historic flood plain east of the freeway. Commercial uses are located Downtown, along Grant Avenue, in commercial centers along Redwood Boulevard and Highway 101, and in various small clusters and convenience centers. Offices are located Downtown, near the Novato Community Hospital, on Novato and South Novato Boulevards, and within the industrial parks. The Hamilton, Ignacio, and Bel Marin Industrial Parks house the bulk of the City's warehousing, distribution, and manufacturing uses. Several industrial operations remain Downtown, between the railroad and Redwood Boulevard.

Affordable Housing Opportunity (AHO) Sites

As a part of the amendments to the Housing Element, Housing Element Program 9.B, five AHO sites have been identified to accommodate affordable multi-family development. Table 3.9-1 identifies these AHO sites, their General Plan designation, zoning district, existing uses, and adjacent uses. The sites and surrounding uses are described below.

TABLE 3.9-1: AFFORDABLE HOUSING OPPORTUNITY SITES

ID	APN	ZONE[1]	GP DESIGNATION	GROSS ACRES	NET DEVELOPABLE AREA[2]	EXISTING USE	ADJACENT USES
1	141-201-48 and 141-201-12	PD	R10 – Medium Density Multi-Family Residential	2.14	1.75	Day care facility	North: Grant Avenue East: Condominiums South and West: Novato Creek
2	153-162-59	PD	General Commercial	2.11	1.50	RV storage yard	North: Single Family Residences South: Landing Court East: Single Family Residence West: Apartments/Mobilehomes
3	125-202-18	PD	Business and Professional Office	39.92 (4-acre portion)	4.0	Vacant	North: Buck Center for Research in Aging and one single family residence South: vacant land East: Redwood Boulevard/U.S.01 West: undeveloped land/single-family residences
4	143-011-08	CG:D	General Commercial	1.76	1.76	Vacant	North: undeveloped land South: commercial and light industrial business uses East: SMART rail corridor/single family residences West: retail center
5	140-011-66	R1-7.5	R1 – Low Density Residential	1.06	1.06	Health services facility	North: Novato Boulevard/single family Residences South: Vineyard Creek/single family residences East: undeveloped land West: church

SOURCE: CITY OF NOVATO 2013

[1] CG:D – GENERAL COMMERCIAL: DOWNTOWN OVERLAY

PD – PLANNED DEVELOPMENT

R1-7.5 – LOW DENSITY RESIDENTIAL; MINIMUM LOT SIZE 7,500 SQUARE FEET

[2] SITE 1: INCLUDES A REDUCTION OF 0.39 ACRES LEAVING A NET ACREAGE OF 1.75 ACRES WITH WHICH THE REALISTIC UNIT CAPACITY IS CALCULATED AS NOTED IN TABLE 63 OF THE HOUSING ELEMENT AND REFLECTING A MINIMUM 20-FOOT STREAM BUFFER AREA.

SITE 2: INCLUDES A REDUCTION OF 0.61 ACRES LEAVING A NET ACREAGE OF 1.50 ACRES WITH WHICH THE REALISTIC UNIT CAPACITY IS CALCULATED AS NOTED IN TABLE 63 OF THE HOUSING ELEMENT AND CREATING REASONABLE SETBACKS ALONG THE NORTH AND EAST BOUNDARIES

Site 1, 1787 Grant Avenue: Site 1 is comprised of two parcels, a 1.90-acre parcel and an adjacent 0.25-acre parcel. The site contains two aging commercial buildings presently occupied by a childcare center operating under a Use Permit. The site is adjacent Grant Avenue to the north and west, a 26-unit, two-story, attached condominium development to the east, and a heavily wooded segment of Novato Creek to the south and west. The South Novato Animal Hospital borders the southwest portion of the site, beyond the creek. Site 1 includes a reduction of 0.39 acres leaving a net acreage of 1.75 acres. This net acreage was used to calculate the realistic unit capacity for Site 1 as noted in Table 63 of the Housing Element and reflecting a minimum 20-foot stream buffer area along Novato Creek .

Site 2, Landing Court: Site 2 is 2.11 acres. The site fronts Landing Court to the east, opposite a light industrial/office complex and self-storage units. Single family residential homes are located to the north and west. The Silver Penny RV Park and a 17-unit apartment complex are located to the south. The site has some basic utility connections, and is currently paved and used for storage for RVs, boats, and trucks. The site is nearly level and is essentially void of vegetation. The site is on a transit corridor, a bike lane is on Redwood Blvd., and accessible local grocery stores and other services are within half of a mile. Site 2 includes a reduction of 0.61 acres leaving a net acreage of 1.50 acres. This net acreage was used to calculate the realistic unit capacity for Site 2 as noted in Table 63 of the Housing Element and to create reasonable setbacks from nearby single-family residences along the north and east boundaries of this site.

Site 3, Redwood Boulevard: Site 3 is a 4-acre portion of a 39.92-acre vacant parcel, and is designated in the General Plan as Business and Professional Office and zoned PD – Planned District. The site is located approximately 900 feet north of the intersection of Wood Hollow Drive and Redwood Boulevard and a proposed rail station. Single family homes are to the west; the Buck Center for Research in Aging which includes an approved, but yet to be constructed 130-unit multi-family development is to the north; and an office complex is to the south.

Site 4, 7506 Redwood Boulevard: Site 4 is a 1.76-acre vacant site. A shopping center that includes a Trader Joe's is located to the west and vacant land is to the north. The site fronts Olive Avenue to the south, with commercial and automotive uses located beyond. Train tracks and Railroad Avenue are located to the east.

Site 5, 1905 Novato Boulevard: Site 5 is a 1.06-acre site developed with an aging commercial building presently occupied by Lifelong Medical Care. The site is adjacent Novato Boulevard to the north with a vacant parcel and residential uses located across Novato Boulevard, a church to the west, vacant land to the east, and Vineyard Creek and residential uses to the south.

Hamilton and Ignacio Industrial Parks

The Hamilton Industrial Park and the Ignacio Industrial Park are located next to each other in southeast Novato, east of Highway 101 (see Figure 2.0-2). Both industrial parks are accessed off of Bel Marin Keys Boulevard. Uses in the parks are primarily light industrial, with scattered office, commercial, and vacant parcels. North of the parks is an electrical substation, light industrial uses, and the Novato Wastewater Treatment Plant. Undeveloped open space is to the east. Industrial uses and an open space area are located to the south.

3.9.2 REGULATORY SETTING

Local

City of Novato General Plan

The City of Novato General Plan is a statement of the community's vision for the future. The General Plan is a comprehensive, long-range plan representing the community's goals and aspirations for its long-term physical form and development. The General Plan is a broad framework for planning the future of the City of Novato.

General plans are prepared under a mandate from the State of California, which requires each city and county prepare and adopt a comprehensive, long-term general plan for its jurisdiction and any

adjacent related lands. Under State law, City ordinances regulating land use must be consistent with the General Plan. The General Plan is implemented by the City staff, the Planning Commission and City Council. The City's zoning and subdivision ordinances, specific plans, and the Capital Improvement Program must all be consistent with the General Plan. The Housing Element represents one of nine chapters of the General Plan.

General Plan Land Use Map

The Land Use Designations Map describes the desired pattern of conservation and development that the General Plan envisions. Development is managed so that growth consistent with the General Plan can occur while the adequacy of infrastructure and public services is maintained.

The General Plan Land Use Map portrays the ultimate uses of land in and around Novato through land use designations (see Figure 3.9-1). The Land Use Map designations for the proposed AHO sites are identified in Table 3.9-1. Land use designations applicable to the AHO sites and the Hamilton and Ignacio Industrial Parks are described below.

Medium Density Multiple-Family Residential (R10): Provides for multiple-family and two-family dwellings, detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses. Densities of 10.1 to 20 dwelling units/gross acre are allowed in the R10 designation**.**

General Commercial (CG): Established commercial areas with off-street parking and/or clusters of street-front stores; regional and local-serving retail establishments; specialty shops, banks, and professional offices; business and personal services; visitor serving hotel/motels with ancillary commercial and service establishments, and other similar uses. This designation is typically assigned to larger parcels, located on a major arterial street. Maximum allowed floor area ratio (FAR) of 0.4 is allowed in the CG designation.

Business and Professional Office (BPO): Office activities, including office campuses, research and development activities, hospitals, and administrative, medical, dental, business offices, and visitor serving hotel/motels with ancillary commercial and service establishments, and other similar uses. A maximum floor area ratio (FAR) of 0.4 is allowed by the BPO designation.

Low Density Residential (R1): Detached or attached single-family dwellings, recreation, home occupations, community facilities, and other similar uses. Densities of 1.1 to 5.0 dwelling units/gross acre are allowed in the R1 designation**.**

Light Industrial /Office (LIO): Permits a wide variety of manufacturing, office, wholesale, service and processing uses that do not generate excessive adverse environmental impacts. Other uses permitted include distribution, warehousing and agricultural products sales and services; auto sales, service and repair; food and drink processing; local serving retail; solid waste transfer facilities, recycling facilities and other similar uses. A maximum FAR of 0.4 is allowed in the LIO designation, except for the Novato Industrial Park and the Hamilton hangar areas, where the maximum FAR is 0.6.

General Plan Policies

The City of Novato General Plan goals, objectives, policies, and programs applicable to environmental issues associated with land use as it relates to the Project are summarized below. The Land Use chapter of the General Plan establishes land use designations with types and

intensities of use and sets policies and programs regarding growth management, annexations, and the City's Sphere of Influence. The adopted goals and policies that relate to the Housing Element are as follows:

LU Policy 1 Implementation of Land Use Map: Implement the Land Use Designations Map by approving development and conservation projects consistent with the land use definitions, densities and intensities indicated in LU Table 2. Ensure consistency between the General Plan, the Zoning Ordinance, and other land use regulations.

LU Policy 2 Development Consistent with General Plan: Allow development at any density within the range shown by the Land Use Designations Map provided applicable objectives, policies and programs of all chapters of the General Plan are met. Maximum densities (top of stated density range applied to total gross acreage) may in some cases be achieved, but there is no guarantee of achieving the maximum density.

LU Policy 4 Clustering of Development: Encourage clustering of development on sites with environmental constraints in order to achieve environmental goals and attain gross densities within the range of the land use designation. Clustering of development may result in net densities on portions of a site exceeding the maximum densities. A site's maximum allowable development potential will be based on gross acreage.

LU Policy 5 Compatibility with Surroundings: Ensure that clustered development is compatible with the surrounding residential neighborhoods. Compatibility is to be determined by the appropriate City authority judging a development project, based on appearance, use characteristics, proximity, and other factors. Compatibility does not require, in the case of two residential neighborhoods, that housing type, lot size, or density be the same. Rather, visual conflict, interference with established use, and negative physical impacts are to be avoided.

LU Policy 9 Constraints Analysis: Assess environmental constraints when considering development of lands with high environmental value or significant hazards. Encourage development sponsors to use such Constraints Analysis in designing their projects, to avoid unnecessary expense in redesigning their project to incorporate the issues defined by Constraints Analysis. The Constraints Analysis expands the City's current development analysis on property. The property owner is being provided the option of submitting the Constraints Analysis prior to submittal of the project application and environmental documentation or submitting it with the environmental documentation. The Constraints Analysis is an analysis in addition to that required by CEQA.

City of Novato Zoning Ordinance

The City of Novato Municipal Code, Chapter 19, Zoning, implements the land use policies of the Novato General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. In addition, the Zoning Ordinance is adopted to protect and to promote the public health, safety, and general welfare of residents, and preserve and enhance the aesthetic quality of the city. Table 3.9-1 above identifies the zoning districts which correspond to and implement the land use categories for the proposed AHO sites. Figure 3.9-2 identifies zoning designations throughout the city, including those currently applicable to the AHO sites and the Hamilton and Ignacio Industrial Parks. The following descriptions further describe the zoning districts currently applicable to the AHO sites and the Hamilton and Ignacio Industrial Parks:

Low Density Residential (R1) District. The R1 zoning districts (R1-7.5, R1-10, R1-20, and R1-40) are intended for areas appropriate for the development of single family homes. The minimum lot area within this zone is 7,500 square feet. The R1 zoning district is consistent with the Low Density Residential (R1) land use designation of the General Plan.

General Commercial (CG) District. The CG zoning district is applied to areas appropriate for a range of community serving commercial, regional retail, and service land uses. The CG zoning district is consistent with the General Commercial (CG) land use designation of the General Plan.

Planned (PD) District. The PD zoning district is applied to large parcels capable of developing as an integrated community neighborhood, with appropriate public services, infrastructure, and neighborhood convenience retail and services; and to smaller sites with sensitive environmental resources or other unique constraints. The PD zoning district allows flexibility in site planning and development standards to encourage developments that are sensitive to natural resources and the surrounding neighborhood. The PD zoning district may be applied to any land use designation of the General Plan. Allowable land uses, building intensity and/or residential densities, and permit requirements within a PD (Planned) zoning district shall be determined by the Council through the adoption of a master plan (Zoning Code Section 19.42.060). Land uses established through the master plan shall be consistent with the General Plan. An approved master plan shall constitute a rezoning and zoning text amendment for a particular site. Development standards for projects within the PD zoning district shall be determined by the council through the adoption of a precise development plan (Zoning Code Section 19.42.060).

Downtown (D) Overlay District. The D overlay district is applied to areas covered by the Downtown Novato Specific Plan, to provide standards for development and new land uses that recognize, protect, and enhance the desired character of the downtown area.

City of Novato Downtown Specific Plan

The Downtown Specific Plan was adopted to propose the improvements, policies and programs to revitalize and enhance the Downtown. The Specific Plan seeks to preserve Downtown Novato as the heart of the community by maintaining and enhancing the small town feel, historical character, charm and pedestrian-friendly human scale while facilitating the development of the downtown as a thriving center of economic, social, and cultural activities. The Downtown Specific Plan encourages coordinated public/private improvements and programs. The Downtown Specific Plan was adopted in 1998 (Reso. 16-99).

Of the five AHO sites identified in Table 3.9-1, Site 4, is within the Downtown area and is identified as a part of the "Young Brothers" site in the Downtown Specific Plan. The land use designations in the Specific Plan are the same as those in the adopted General Plan. Development policies identify two alternatives for this site: 1) intermodal transit center and 2) commercial use. The project contemplates amending the Downtown Specific Plan to acknowledge the Affordable Housing Overlay proposed in Housing Element Program 9.B. and multi-family residential uses at Site 4.

Novato Industrial Park Precise Development Plan and Master Plan

The Novato Industrial Park Precise Development and Master Plan (PDMP) establishes development objectives for properties within the Ignacio Industrial Park, the Bel Marin Industrial Park, and portions of the Hamilton Industrial Park area. The PDMP identifies the parcels affected by the plan

and for industrial park uses, including manufacturing and business services uses, laboratories, repair workshops, warehousing and professional or administrative offices. Other conditional uses, such as automotive-related uses and industrial uses not conducted within a closed structure, may be considered by the City on a permit basis. The PDMP establishes land use regulations and property development standards, including setback requirements, lot coverage, building height limit, construction, air pollution, and air safety zones.

Gnoss Field Airport Master Plan

The Airport Master Plan includes an Approach and Clear Zone Plan (ACZP). The ACZP provides plan and profile views for the runway approach areas. The ACZP is used to identify obstructions in the vicinity of the Airport which may have an impact on the use of the runway and adjacent airspace. Site 3 is located in the 20:1 conical surface, but is not within the runway approach or clear zones. Sites 1, 2, 4, and 5 are outside of the 20:1 conical surface, runway approach, and clear zones.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on land use and planning if it will:

- Physically divide an established community
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Conflict with any applicable habitat conservation plan or natural community conservation plan

IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Potential to physically divide an established community (No Impact)

Typically a project that might physically divide an established community would involve infrastructure or barriers, such as a freeway to be located through developed sections of a city involving demolition of existing homes and businesses that create an impediment to community access and cohesion. Existing US Highway 101 could be considered to physically divide the Novato community in areas where streets don't continue under or over the freeway and neighborhoods on either side of the freeway lack connectivity and cohesion with each other.

The proposed Housing Element is intended to function as a policy document to guide land use decisions relating to housing within the City of Novato. The programs in the Housing Element encourage the maintenance of existing housing, development of affordable housing, and provision of housing appropriate for special needs groups. Most of the development that would be supported by the Housing Element includes residential uses comprised of single family residences, multi-family units, group homes, second units, and senior housing that on parcels already

designated for residential development by the City's General Plan. The Housing Element also includes programs that would designate new sites for affordable housing and emergency shelters; these sites are located in areas of the city that are currently developed or vacant sites designated for development and urbanization. None of these programs in the draft Housing Element would lead to new development or infrastructure improvements that could create a physical division of any neighborhood within Novato and as such there is **no impact**.

Impact 3.9-2: Potential to conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted to avoid or mitigate an environmental effect (Less than Significant)

CONSISTENCY WITH THE GENERAL PLAN

As set forth by state law, the General Plan serves as the primary planning document for the City. Subordinate documents and plans are required to be consistent with the General Plan. The proposed Housing Element project would update the Housing Element of the General Plan, amend the General Plan land use map and text, amend the text and land use map in the Downtown Specific Plan, and revise the Zoning Ordinance, as described in Chapter 2.0. The Housing Element identifies the City's approach to accommodating its housing needs. The majority of Novato's housing needs would be accommodated on sites currently designated for housing development; however, there is a shortfall of sites to accommodate the city's full housing need.

As noted in Table 3.9-1, the City of Novato General Plan Land Use Map would designate five sites as opportunity sites for housing under the Affordable Housing Overlay proposed as part of Housing Element Program 9.B. Program 9.E would allow increased densities (30 units per acre) for senior housing on the five AHO sites. Currently, the General Plan designations for these sites would not accommodate high density residential development. LU Policies 1 and 2 require development to be consistent with the Land Use Map and LU Policy 1 requires that the General Plan, Zoning Ordinance, and other land use regulations be consistent with the General Plan. With implementation of the proposed project, the General Plan text would be amended to include the Affordable Housing Overlay land use designation to allow multi-family uses as described in Chapter 2.0 and the General Plan Land Use Map would be revised to include the Affordable Housing Overlay designation on the five AHO sites. The Zoning Ordinance, Downtown Specific Plan, and Novato PDMP would also be revised as described below.

All five of the sites are designated for urbanization and development in the adopted General Plan; none of the AHO sites are designated for conservation or preservation uses. In evaluating the General Plan designation amendment for potential environmental impacts related to consistency with land use plans, policies, and regulations, several General Plan policies must be examined to determine whether there is the potential for the project to result in an environmental impact relating to an applicable land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect

As required by state housing law, the City has prepared draft revisions to the adopted Housing Element, which responds to the current and near-term future housing needs of the community as assigned through the state's Regional Housing Needs Allocation ("RHNA"). Accordingly, the draft Housing Element contains goals, policies, and implementing programs setting forth the City's approach to meeting its assigned RHNA, including identifying an adequate supply of land that can be zoned at appropriate densities to accommodate housing demand in four income categories:

above moderate, moderate, low, and very low. General Plan law requires that all component elements, whether mandatory or optional, be consistent with one another.

Table 2.0-1 in the Project Description identifies the proposed programs that would assist the City in addressing its housing needs. Implementation of the Housing Element and development of new housing in Novato would for the most part be in currently urbanized neighborhoods and would occur on properties that are currently designated in the General Plan and zoned for residential development. Many of the programs in the Housing Element will not result in new development or increased development densities and would not result in any environmental impact associated with a conflict with adopted land use plans, policies, or regulations, including programs that commit the City to considering various housing related issues, but specific future actions have not yet been determined (HO Programs 4.A, 5.F, 5.I, 5.J, 6.B, 6.C, 7.A, 7.E, 7.F, 8.B, 9.A, 9.C, 9.D, 14.A, 14.B, 15.A, 15.B), programs for continued implementation of adopted or existing standards and regulations (HO Programs 2.A, 2.B, 4.B, 5.B, 5.K, 8.A, 9.D, 11.A), programs involving City processing of housing projects (9.F, 9.G, 9.H, 9.I, 12.C, 13.A), programs involving coordination with various agencies, organizations, and property owners (HO Programs 1.B, 1.C, 5.E, 5.G, 5.H, 6.A, 7.B, 7.D, 10.A, 12.B, 13.B, 14.C), programs that affect management of housing (HO Programs 5.A), and programs involving outreach and the dissemination of information regarding housing issues (HO Programs 1.A, 5.C, 5.G, 7.F, 13.C).

Programs that are intended to either incentivize housing or support a broader variety of housing types, but do not require any specific action at this time (HO Programs 3.A, 3.B, 5.D, 5.J, 6.B, 6.C, 7.A, 7.E, 7.F, 8.B, 9.A, 9.C, 11.A, and 12.C) will be evaluated in the future when specific implementing actions are identified (e.g., specific changes to development standards, changes to permitted uses or densities, etc.), as it would speculative at this time to guess what specific actions may be used in the future to implement these programs.

While some of the programs in the Housing Element would expand the permitted uses on a site (such as HO Program 12.A – adding emergency shelter as a permitted use in the Hamilton or Ignacio Industrial parks, HO Program – 7.C - adding single room occupancy units as a permitted use in Mixed Use, R10 and R20 zoning districts, HO Program 12.D - requiring transitional and supportive housing to be subject to the same regulations as other residential dwellings of the same type in all residential zoning districts, HO Program 9.E – allowing farmworker housing in the agricultural district as allowed and required by state law) as described in Chapter 2.0 Project Description, these programs would not change the location of planned urban uses in the General Plan or significantly increase the intensity of future development and thus would not result in environmental impacts associated with conflicts with adopted land use plans, policies, and regulations.

Housing Element Programs 9.B, 9.E, and 12.A contemplate specific actions that would accommodate increased development densities and intensities, which could result in conflicts with land use plans, policies, or programs adopted to avoid or mitigate an environmental effect. Program 9.B identifies specific steps and incentives to address lower income housing need, including placement of an Affordable Housing Overlay district on all or a portion of the five AHO sites. Program 9.E would allow increased densities (30 units per acre) for senior housing on the five AHO sites. Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks.

General Plan Goal 8 calls for provision of a variety of housing opportunities for an economically and socially diverse population, while preserving the character of the community. Low and moderate income housing is to be given special consideration. The amendments to the Housing Element are the direct implementation of this General Plan goal in that the Housing Element is intended to meet the current and future housing needs of the community by identifying an adequate supply of land that can be zoned at appropriate densities to accommodate housing demand in four income categories: above moderate, moderate, low, and very low. HO Program 9.B includes actions and incentives to identify five potential sites that could be used to address the remaining need for lower income housing to be identified as AHO on the General Plan map. Program 9.E provides further incentive by allowing a density bonus for senior housing within the AHO. HO Program 12.A would permit emergency shelters at the Hamilton or Ignacio Industrial parks.

LU Policy 4 requires clustering of development on sites with environmental constraints in order to achieve environmental goals and attain gross densities within the range of the land use designation. Constraints presented by steep slopes and presence of natural habitat on three of the AHO sites have been identified requiring development clustering.

Site 1 (1787 Grant Avenue) backs up to a heavily wooded segment of Novato Creek. Program 9.B of the draft Housing Element establishes a provision specifying that future development on Site 1 shall maintain a minimum 20-foot setback from the top of bank of Novato Creek. This program requirement is intended to respect existing flood control and access easements held by the Marin County Flood Control and Water Conservation District that cross Site 1 and to buffer the riparian habitat along Novato Creek from future development. In addition, the City's Waterway and Riparian Protection Standards (Novato Zoning Code Division 19.35) and potentially the Wetland Protection and Restoration Standards (Novato Zoning Code Division 19.36) would be applied to a new multi-family residential development project proposed at Site 1. Division 19.35 applies a 50-foot stream protection zone, except in limited circumstances, to sites adjacent to waterways. Division 19.36 applies a 50-foot buffer area, except in limited circumstances, for new development near delineated jurisdictional wetlands. A future multi-family residential proposal on Site 1 complying with the requirements of Draft Housing Element Program 9.B and the standards of Novato Zoning Code Division 19.35 and 19.36, as applicable, would lead to clustering of new development to avoid the riparian habitat along Novato Creek consistent with Land Use Policy 4.

Site 3 (Redwood Boulevard) consists of a 4-acre portion of a larger 39.92 acre parcel. Site 3 was selected to avoid the steep slopes with past landslide activity, oak woodland and oak savanna grassland habitat, and natural drainage courses crossing the balance of the 39.92 acre parcel. As such, the location of Site 3 in and of itself would cluster development away from these constraints and natural features. However, Site 3 includes and is adjacent to seasonal wetland areas. Given this circumstance, a future multi-family residential project at Site 3 may be required to comply with the requirements of Novato's Wetland Protection and Restoration Ordinance (Novato Zoning Code Division 19.36), assuming the noted wetland features qualify as jurisdictional wetlands as determined by the Army Corps of Engineers. This ordinance requires a use permit in instances where new development would occur inside 50-feet of or involving the fill/encroachment into a jurisdictional wetland. The use permit process would consider the effect of new development inside 50-feet of and/or the filling of a jurisdictional wetland and assign measures, as appropriate, to preserve, restore, maintain, and enhance wetlands to be retained or replace lost wetland habitat on- and/or off-site. A future project may be designed to maintain a 50-foot distance from

the seasonal wetlands at Site 3, assuming these wetlands prove to be jurisdictional wetlands, thus clustering development away from these water features. A project conforming to the requirements of the City's Wetland Protection and Restoration Ordinance is considered to be consistent with Land Use Policy 4.

Site 4 (7506 Redwood Boulevard) is located adjacent to two drainage courses that may qualify as jurisdictional wetlands. Should these drainages qualify as jurisdictional wetlands, then Novato's Wetland Protection and Restoration Ordinance (Zoning Code Division 19.36) would be applicable to a future multi-family development proposed on Site 4. This ordinance requires a use permit in instances where new development would occur inside 50-feet of or involving the fill/encroachment into a jurisdictional wetland. The use permit process would consider the effect of new development within 50-feet of and/or the filling of a jurisdictional wetland and assign measures, as appropriate, to preserve, restore, maintain, and enhance wetlands to be retained or replace lost wetland habitat on- and/or off-site. A future project may be designed to maintain a 50-foot distance from the seasonal wetlands at Site 4, assuming these wetlands prove to be jurisdictional wetlands, thus clustering development away from these water features. A project conforming to the requirements of the City's Wetland Protection and Restoration Ordinance is considered to be consistent with Land Use Policy 4.

Site 5 (1905 Novato Boulevard) abuts a segment of Vineyard Creek. Accordingly, the City's Waterway and Riparian Protection Standards (Division 19.35 of the Novato Zoning Code) would be applied to a new multi-family residential development project proposed at Site 5. The City's Waterway and Riparian Protection Standards apply a 50-foot stream protection zone to sites adjacent to waterways. A multi-family residential proposal on Site 5 complying with the 50-foot stream protection zone would cluster new development away from Vineyard Creek. Should a future project contemplate encroachment into the 50-foot stream protection zone it would be necessary for such a project to obtain a use permit requiring an analysis of the implications reducing the stream protection zone in terms of potential effects on nearby Vineyard Creek. A project conforming to the requirements of the City's Waterway and Riparian Protection Ordinance is considered to be consistent with Land Use Policy 4.

LU Policy 5 requires that clustered development is compatible with the surrounding residential neighborhoods. Compatibility is to be determined by the appropriate City authority judging a development project, based on appearance, use characteristics, proximity, and other factors. Compatibility does not require, in the case of two residential neighborhoods, that housing type, lot size, or density be the same. Rather, visual conflict, interference with established use, and negative physical impacts are to be avoided. The Housing Element requirement that development on the AHO sites be subject to design review is intended to encourage that these infill sites be developed in a manner that is compatible with the surrounding neighborhood. Environmental issues related to compatibility with surrounding neighborhoods include noise and aesthetic issues such as lighting and glare, are discussed in the relevant portions of Sections 3.1 through 4.0 of this Draft EIR.

LU Policy 9 requires that environmental constraints be assessed when considering development of lands with high environmental value or significant hazards. This Draft EIR identifies potential environmental constraints associated with implementation of the proposed project. Environmental issues are discussed in Sections 3.1 through 3.14 and Chapter 4.0 of this Draft EIR. Specifically, lands with high environmental value are discussed in Section 3.1 (scenic and aesthetic resources), Section 3.2 (sensitive biological habitat and natural community resources), Section 3.3

(cultural resources), Section 3.5 (mineral resources), and Section 3.6 (hydrological resources). Significant hazards are discussed in Section 3.5 (geological and soils hazards), Section 3.7 (safety hazards and hazardous materials), and 3.8 (flooding hazards).

Subsequent development that is consistent with the Housing Element, including the AHO sites, single family and multifamily residential uses, emergency shelter uses, farmworker housing, and second units, would be required to be consistent with the General Plan, including policies and programs adopted to address environmental impacts. The proposed Housing Element project would not remove or modify any policies or measures from the General Plan that are intended for environmental protection.

The proposed project could result in potential adverse environmental impacts, including to traffic, noise, water quality, biological resources, drainage and water quality, air quality, hazards, geology/soils, and cultural resources. Impacts to these resources, including consistency with applicable plans, policies, and regulations, are evaluated in the appropriate sections of this EIR.

CONSISTENCY WITH THE ZONING ORDINANCE

As noted above in discussion of General Plan consistency, the adoption of the revisions to the Housing Element programs would expand the permitted uses on a site as described in Chapter 2.0 Project Description, these programs would not change the location of planned urban uses in the General Plan or significantly increase the intensity of future development, except for HO Programs 9.B, 9.E, and 12.A.

Program 12.A would introduce emergency shelters as a new permitted use in the Hamilton and Ignacio Industrial parks. Any subsequent emergency shelter development would be required to be consistent with all relevant zoning standards, including those that avoid or mitigate an environmental impact.

Programs 9.B would change the land use designations on the five AHO sites to accommodate multi-family housing as described in Chapter 2.0 and Program 9.E would allow a density bonus for senior housing on these sites. The proposed AHO designation will allow the sites to be developed either under their base (existing zoning) designation or with multi-family affordable housing. The proposed project will amend the Zoning Ordinance to identify the AHO sites on the Zoning Map; the density and intensity of multi-family use and related standards would be added as a distinct provision of the Zoning Ordinance. The intended use of the sites for multi-family residential will then be consistent with the AHO overlay designation. Subsequent individual development projects will be required to be consistent with the Zoning Ordinance, including the site planning and general development standards established in Article 3 that address environmental impacts, including waterway and riparian protection, wetland protection and restoration, and woodland and tree preservation. The AHO sites would be required to go through the design review process to ensure these infill sites be developed such that the character, size, massing, and aesthetics are compatible with the surrounding neighborhood and that the relevant portions of the City's Zoning Ordinance that avoid or mitigate an environmental impact are addressed.

CONSISTENCY WITH OTHER CITY PLANS

The Housing Element project would require amendment of the Downtown Specific Plan to address Site 4 (Redwood Boulevard) and amendment of the Novato Industrial Park Precise Development Plan and Master Plan (PDMP).

The Housing Element includes programs to support the development of housing in the Downtown, including Program 8.A which may consider height limit bonuses in the Downtown, Program 8.B which will consider allowing multi-family dwellings in mixed use projects in the Downtown Core Retail and Downtown Core Business Districts, Program 9.A to facilitate development at housing sites in the Downtown, and Program 9.B which would amend the Downtown Specific Plan to include an AHO designation on Site 4. The amendment to the Downtown Specific Plan would allow multi-family land use at a location currently designated for intermodal transit and commercial uses. This amendment would not remove any measures or provisions for environmental protection and development of Site 4 would be required to be consistent with the policies and standards of the DSP.

The Hamilton and Ignacio Industrial Parks were identified as suitable locations for emergency shelters due to the availability of commercial structures of a size that could accommodate emergency shelter facilities. The PDMP amendment would include development and management standards applicable to emergency shelters. Development of any emergency shelter within the Hamilton and Ignacio Industrial Parks would be required to be consistent with all regulatory documents, including the standards and performance measures identified in the PDMP and Zoning Ordinance that address environmental effects.

AIRPORT MASTER PLAN

The Gnoss Field Airport Master Plan identifies the 20:1 conical surface that rises from ground level at the airport runway to 252 feet above ground level just beyond Highway 101. Sites 1, 2, 4, and 5 are not within the 20:1 conical surface or other runway approach or clear zones. Site 3 is within the 20:1 conical surface, but is not within the runway approach or clear zones. Future development on Site 3 would be well below the approach slope, which is approximately 252 feet elevation at the Site 3, and would thus be consistent with the Airport Master Plan. The proposed update to the Housing Element, including the changes in the land use designations of the AHO and emergency shelter sites as described in Chapter 2.0, would not conflict with land use policies, plans, or regulations adopted to mitigate an environmental effect. As previously discussed, subsequent development projects would be required to be consistent with all applicable policies, standards, and regulations. Any potential environmental impact associated with conflicts with land use requirements would be less than significant.

Impact 3.9-3: Potential to conflict with a habitat conservation plan or natural community conservation plan adopted to avoid or mitigate an environmental effect (No Impact)

Neither the County of Marin nor the City of Novato has adopted or is within the jurisdiction of an adopted habitat conservation plan or natural community conservation plan and as such, adoption and implementation of the Housing Element would not conflict with an applicable habitat conservation plan or natural community conservation plan and there is no impact.

REFERENCES

City of Novato 1983. *Novato Industrial Park Precise Development and Master Plan.* Novato, California. Adopted February 1978, amendments through January 1983.

City of Novato 1998. *Downtown Specific Plan.* Novato, California. Adopted July 14 1998.

City of Novato 2000. *Environmental Review Guidelines.* Novato, California. Revised April 2000.

City of Novato 2007. *Bicycle Plan.* Novato, California. September 25, 2007.

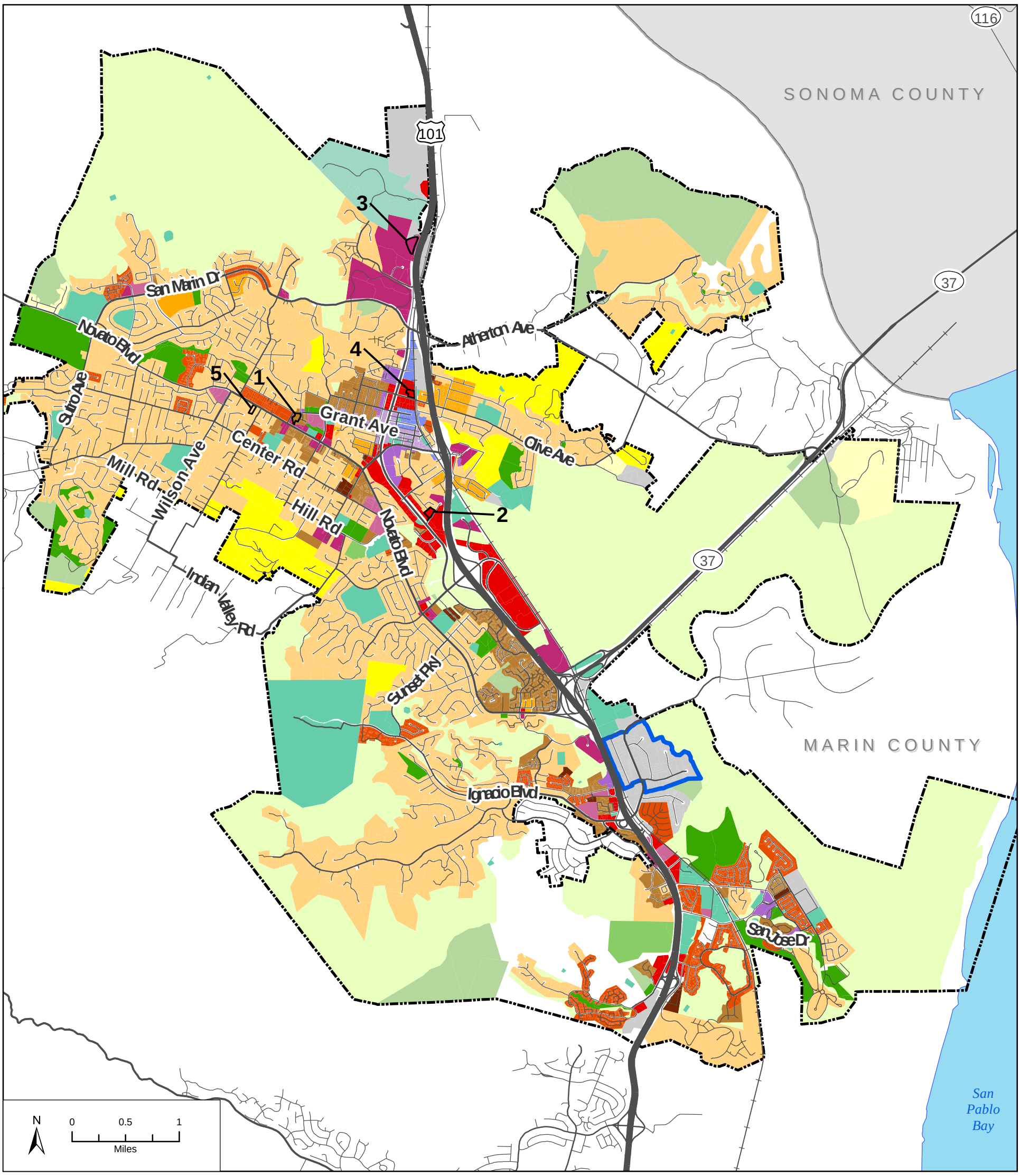
City of Novato 2007. *City of Novato General Plan – Revision October 9, 2007.* Novato, California. Resolution No. 122-07.

City of Novato 2009. *Existing Conditions Report.* Novato, California. March 25, 2009.

City of Novato 2013. *Zoning Ordinance.* Novato, California. Amendments through May 14, 2013.

City of Novato 2013. *Revised Draft 2007-2014 Housing Element*. Novato, California. Revised Draft April 18, 2013.

Marin County 1997. *1989 Airport Master Plan - Marin County Airport.* Antioch, CA. Adopted 1989, updated 1997.



General Plan Land Use Designations

- RR - Rural Residential
- RVL -Very Low Density Residential
- R1 - Low Density Residential
- R4 - Medium Density Detached Residential
- R5 - Medium Density Residential
- R10 - Medium Density Multiple Family Residential
- R20 - High Density Multiple Family Residential
- MU - Mixed Use
- CN - Neighborhood Commercial
- CG - General Commercial
- CD - Downtown Core
- CI - Commercial/Industrial
- BPO - Business and Professional Office
- REI - Research/Education-Institutional
- LIO - Light Industrial/Office
- OS - Open Space
- AG - Agriculture
- CON - Conservation
- P - Parkland
- CF - Community Facilities

- Affordable Housing Overlay Sites (1-5)
- Hamilton and Ignacio Industrial Parks
- City of Novato

Data sources: Marin County GIS; City of Novato GIS. Map date: June 18, 2013.

CITY OF NOVATO HOUSING ELEMENT

Figure 3.9-1: General Plan Land Use Designations

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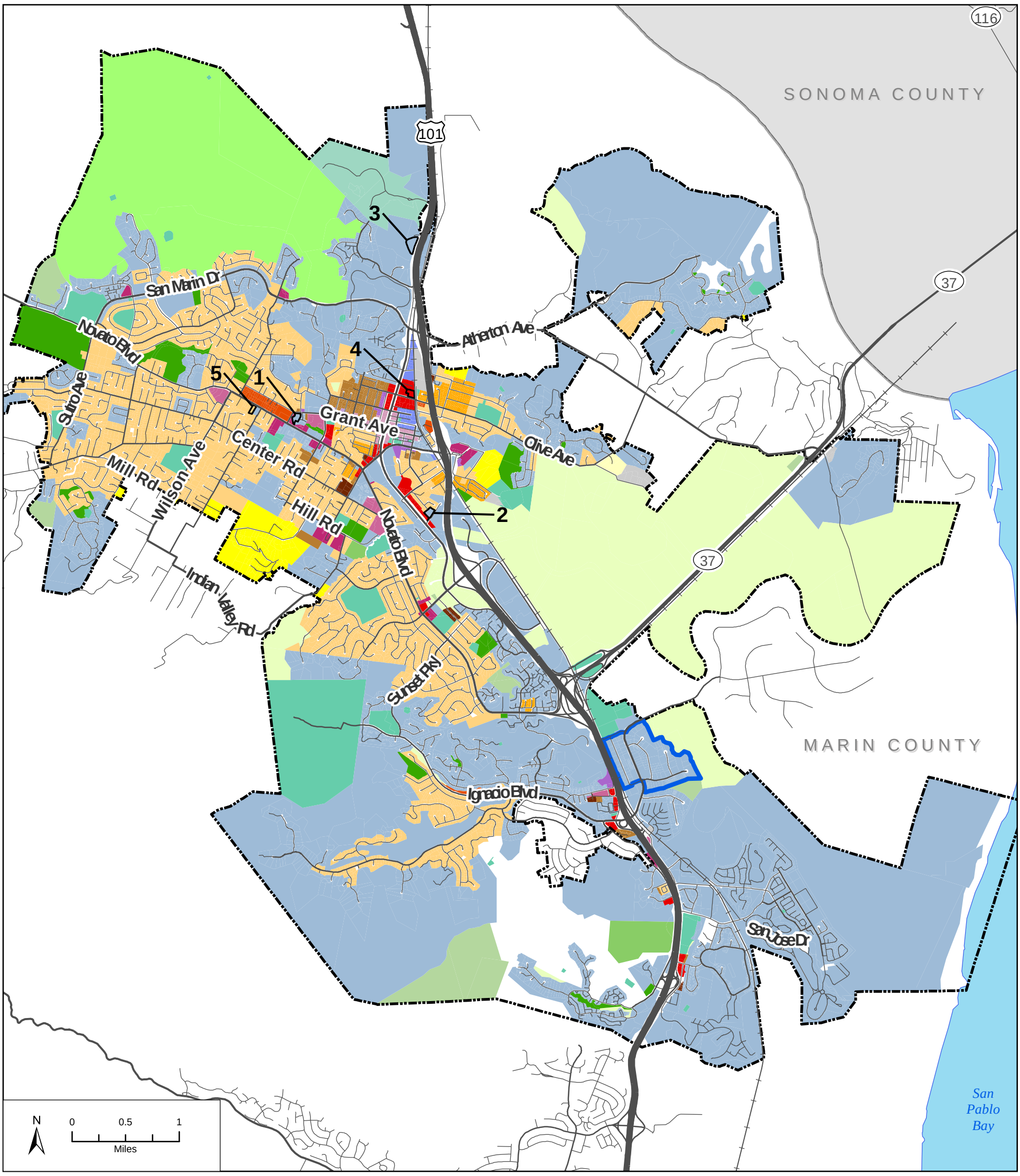

Zoning Districts

- RR-80 - Rural Residential
- RVL-40; RVL-80 - Very Low Density Residential
- R1-7.5; R1-10; R1-20; R1-40 - Low Density Residential
- R4-6.0 - Medium Density Detached Residential
- R5-4.5; R5-7.5 - Medium Density Residential
- R10-2.0; R10-2.2; R10-2.5; R10-4.5 - Medium Density Multifamily Residential
- R20-1.5; R20-2.0 - High Density Multiple Family Residential
- MU - Mixed Use
- CN - Neighborhood Commercial
- CG - General Commercial
- CDB - Downtown Core Business
- CDR - Downtown Core Retail
- CI - Commercial/Industrial
- BPO - Business and Professional Office
- REI - Research/Education-Institutional
- LIO - Light Industrial/Office
- OS - Open Space
- ROS - Restricted Open Space
- AG - Agriculture
- CON; CON-10; CON-60 - Conservation
- PL - Parkland
- PD - Planned District
- CF - Community Facilities

Affordable Housing Overlay Sites (1-5)

Hamilton and Ignacio Industrial Parks

City of Novato

CITY OF NOVATO HOUSING ELEMENT

Figure 3.9-2: Zoning Districts

Data sources: Marin County GIS; City of Novato GIS. Map date: June 19, 2013.

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