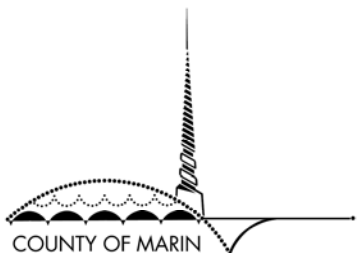


**Appendix A: Notice of Preparation (NOP), NOP Comment Letters, Scoping Meeting Questions**

---

*This page is intentionally blank.*



**NOTICE OF PREPARATION AND  
NOTICE OF PUBLIC SCOPING SESSION  
HOUSING ELEMENT AND SAFETY ELEMENT UPDATES  
TO THE 2007 COUNTYWIDE PLAN UPDATE  
ENVIRONMENTAL IMPACT REPORT**

NOTICE IS HEREBY GIVEN that Marin County will be preparing an Environmental Impact Report (EIR) for updates to the Housing Element and Safety Element of the 2007 Countywide Plan proposed Project. This EIR is being prepared by Marin County, which is the lead agency, in accordance with the California Environmental Quality Act (CEQA), the State of California CEQA Guidelines, and County Environmental Impact Review Guidelines. In accordance with CEQA Guidelines section 15082, this Notice of Preparation (NOP) is being circulated to obtain suggestions and information responsible, and/or trustee, and involved federal agencies and members of the public, including organizations and individuals, on the content and scope and content of the environmental analysis to be included in EIR.

**Project Location:**

The project location is in unincorporated Marin County, which is located across the Golden Gate Bridge from the City of San Francisco, in the northwestern part of the San Francisco Bay Area.

**Project Description:** The proposed Project consists of amendments to update two elements of the Marin County General Plan, as described below.

**Housing Element:**

Marin County, like other communities in California, is initiating a planning process under State law to identify how to meet the County's housing needs at all income levels. This process involves updating the County's Housing Element, which is a required or "mandatory" component of the Countywide Plan (the County's General Plan). The California Department of Housing and Community Development (HCD) dictates that among the seven mandatory elements of a general plan, one element must address local housing needs. The Housing Element will identify adequate sites to meet the 3,569 housing units as assigned by the Regional Housing Need Allocation and a buffer. Sites will be distributed throughout the unincorporated areas of the County consistent with goals to affirmatively further fair housing and meet site requirements stipulated by the State's Housing and Community Development Department. The Housing Element will also present programs and policies to meet the housing needs of unincorporated Marin County.

According to State housing element legislation, all local governments must adopt land use plans and regulations that provide opportunities for, and do not unduly constrain, housing development. Because housing availability is a critical issue with statewide implications, and most housing decisions occur at the local level, State law requires housing elements to be updated on a regular cycle. Accordingly, the timeframe for the next Housing Element is the planning period 2022-2030. The State also mandates that housing elements, unlike other elements of the general plan, be reviewed and certified by the State.

**Safety Element:**

Marin County is initiating a planning process required by State law, to update the Safety Element in the Countywide Plan (the County's General Plan) to address climate change resiliency. SB 379 requires all counties and cities to review and update their general plan safety elements with climate change adaptation measures. The required review and update consists of the following three parts:

- A vulnerability assessment that identifies the risks climate change poses to the local jurisdictions;
- Identification of adaptation and resiliency goals, policies, and objectives; and
- Feasible implementation measures.

The Safety Element update will also address other legislative mandates to reduce fire risk, plan for emergency evacuation, and reduce risks from flooding. The update will occur simultaneously

and in conjunction with the Housing Element and will also occur in coordination with the update of the Marin County Multijurisdictional Local Hazard Mitigation Plan.

**Probable Environmental Effects of the Project:**

The EIR will evaluate the project with respect to all of the following environmental topical issues, which concern environmental factors that could be affected by the proposed Project, but will focus on some issues more than others. The topical areas that will be addressed in the EIR are: Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mandatory Findings of Significance, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

For information regarding environmental review of the proposed Project, please visit the Environmental Review Division's project webpage under the current projects tab at: <https://www.marincounty.org/depts/cd/divisions/environmental-review>

For more information about the Housing Element and Safety Element processes, please visit the Planning Division's webpage at: <https://www.marincounty.org/depts/cd/divisions/planning/housing-and-safety-elements>

Related planning documents and reference information for the Housing and Safety Elements and environmental review are available on the above listed webpage, where you can subscribe to receive email notifications and updates.

To ensure that the EIR for this project is thorough and adequate, and meets the needs of all agencies reviewing it, the County is soliciting comments on specific issues to be included in the environmental review. Public comments on the scope of issues to be evaluated in the EIR are encouraged.

If you wish to comment during the NOP comment period, the County will accept written comments about the scope and content of EIR until the close of the 45-day NOP comment period at 4:00 p.m. on **Monday, January 24, 2022**. Commenters are encouraged to submit comments by email to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) before the end of the comment period deadline. Commenters can also mail written comments postmarked on or before January 24, 2022 to the attention of Rachel Reid, Environmental Planning Manager at 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903. If you have any questions, or need additional information about the Housing or Safety Elements respectively, please contact Jillian Zeiger, Senior Planner with Housing and Federal Grants Division at: [JZeiger@marincounty.org](mailto:JZeiger@marincounty.org) or Leslie Lacko, Senior Planner with Advanced Planning at [LLacko@marincounty.org](mailto:LLacko@marincounty.org).

In compliance with COVID-19 adaptive procedures, and as allowed by Governor Newsom's Executive Order N-29-20, a virtual scoping session will be held on **Tuesday, January 11, 2022** from **6:00 p.m. to 8:00 p.m.** The meeting will be held via Zoom, and members of the public may attend and participate in this scoping session online. To participate in the scoping session, the Zoom weblink and meeting information is as follows:

<https://us06web.zoom.us/j/82023833240>  
Webinar ID: 820 2383 3240

Or by Telephone: (669) 900-6833  
Webinar ID: 820 2383 3240

During the virtual public scoping session, members of the public will have the opportunity to provide oral comments, which will be recorded and included in the Draft EIR. Those wishing to speak will need to indicate so during the course of the meeting by either using the "Raise Hand" button. If you choose to call in to the Zoom meeting, press \*9 to inform the moderator that you would like to comment.

If you challenge the decision on this application in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Community Development Agency, Planning Division during or prior to the public hearing. (Government Code Section 65009(b)(2)).



December 8, 2021

*Rachel Reid*

Rachel Reid  
Environmental Planning Manager



## NATIVE AMERICAN HERITAGE COMMISSION

December 16, 2021

Rachel Reid, Environmental Planning Manager  
Marin County Community Development Agency  
3501 Civic Center Drive, #308  
San Rafael CA 94903

**Re: 2021120123, Housing & Safety Element update to the 2007 Marin Countywide Plan Project, Marin County**

Dear Ms. Reid:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

PARLIAMENTARIAN  
**Russell Atebery**  
Karuk

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Isaac Bojorquez**  
Ohlone-Costanoan

COMMISSIONER  
**Sara Dutschke**  
Miwok

COMMISSIONER  
**Buffy McQuillen**  
Yakayo Pomo, Yuki,  
Nomlaki

COMMISSIONER  
**Wayne Nelson**  
Luiseño

COMMISSIONER  
**Stanley Rodriguez**  
Kumeyaay

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

  - a. A brief description of the project.
  - b. The lead agency contact information.
  - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
  - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

  - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

  - a. Alternatives to the project.
  - b. Recommended mitigation measures.
  - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:

  - a. Type of environmental review necessary.
  - b. Significance of the tribal cultural resources.
  - c. Significance of the project's impacts on tribal cultural resources.
  - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

  - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
  - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a. Avoidance and preservation of the resources in place, including, but not limited to:
    - i. Planning and construction to avoid the resources and protect the cultural and natural context.
    - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - i. Protecting the cultural character and integrity of the resource.
    - ii. Protecting the traditional use of the resource.
    - iii. Protecting the confidentiality of the resource.
  - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
  - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
  - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
  - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).



The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: [http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation\\_CalEPAPDF.pdf](http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf)

## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf).

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

## NAHC Recommendations for Cultural Resources Assessments

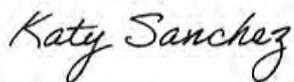
To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

- b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.
- 3.** Contact the NAHC for:
- a.** A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - b.** A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
- 4.** Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
- a.** Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
  - b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
  - c.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:  
[Katy.Sanchez@nahc.ca.gov](mailto:Katy.Sanchez@nahc.ca.gov).

Sincerely,



Katy Sanchez  
Associate Environmental Planner

cc: State Clearinghouse



## Hall, Chelsea

---

**From:** Hultman, Debbie@Wildlife <Debbie.Hultman@wildlife.ca.gov>  
**Sent:** Friday, January 21, 2022 5:41 PM  
**To:** EnvPlanning  
**Cc:** Culpepper, Amanda(Mandy)@Wildlife; Day, Melanie@Wildlife; Weightman, Craig@Wildlife; Swan, Robynn@Wildlife; OPR State Clearinghouse; Aarreberg, Arn@Wildlife; Lacko, Leslie; Zeiger, Jillian  
**Subject:** Housing and Safety Elements Update-Marin County-2021120123  
**Attachments:** Housing and Safety Elements Update-Marin County-2021120123-Reid-CULPEPPER01202022.pdf

Ms. Reid,

Please see the attached letter for your records. If you have any questions, contact Amanda Culpepper, cc'd above.

Thank you,

*Debbie Hultman* | Assistant to the Regional Manager  
California Department of Fish and Wildlife – Bay Delta Region  
2825 Cordelia Road, Ste. 100, Fairfield, CA 94534  
707.428.2037 | [debbie.hultman@wildlife.ca.gov](mailto:debbie.hultman@wildlife.ca.gov)



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Bay Delta Region  
2825 Cordelia Road, Suite 100  
Fairfield, CA 94534  
(707) 428-2002  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



January 20, 2022

Ms. Rachel Reid  
County of Marin, Environmental Planning  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903  
[envplanning@marincounty.org](mailto:envplanning@marincounty.org)

Subject: Housing Element and Safety Element Updates to the 2007 Countywide Plan,  
Notice of Preparation of a Draft Environmental Impact Report, SCH No.  
2021120123, Marin County

Dear Ms. Reid:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) from the County of Marin (County) for the Housing Element and Safety Element Updates to the 2007 Countywide Plan (Project).

CDFW is a **Trustee Agency** with responsibility under the California Environmental Quality Act (CEQA) for commenting on projects that could impact fish, plant, and wildlife resources (Pub. Resources Code, § 21000 et seq.; Cal. Code Regs., tit. 14, § 15386). CDFW is also considered a **Responsible Agency** if a project would require discretionary approval, such as a California Endangered Species Act (CESA) Incidental Take Permit (ITP), a Native Plant Protection Act (NPPA) Permit, a Lake and Streambed Alteration (LSA) Agreement, or approval under other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources. Pursuant to our authority, CDFW has the following concerns, comments, and recommendations regarding the Project.

## **PROJECT DESCRIPTION AND LOCATION**

The Project would update the Housing Element and the Safety Element within the County's General Plan. The Housing Element would identify locations in unincorporated Marin County to meet the need for 3,569 housing units and present programs and policies to meet the housing needs of unincorporated Marin County. The timeframe for the Housing Element update would be 2022 through 2030. The Safety Element would be amended to address climate change resiliency, including fire risk reduction, emergency evacuation plans, and flood risk reduction. The Safety Element update would also include a vulnerability assessment identifying climate change risks to communities; a list of climate change adaptation and resiliency goals, policies, and



Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 2 of 17

objectives; and potential implementation measures. The Project is located in unincorporated Marin County.

The CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) require that the draft EIR incorporate a full project description, including reasonably foreseeable future phases of the Project, that contains sufficient information to evaluate and review the Project's environmental impact (CEQA Guidelines, §§ 15124 & 15378). Please include a complete description of the following Project components in the Project description, as applicable:

- Footprints of permanent Project features and temporarily impacted areas, such as staging areas, access routes, and high fire risk zones targeted for vegetation treatment or removal.
- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, vegetation treatment for fuel reduction, floodwalls or levees, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

Based on the broad scope of the Project, it appears that the draft EIR may be a program EIR (CEQA Guidelines, § 15168). In this case, while program EIRs have a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with an EIR or large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning approval at hand. The CEQA Guidelines section 15168, subdivision (c)(4) states, "Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." Based on CEQA Guidelines section 15183.3 and associated *Appendix N Checklist*, and

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 3 of 17

consistent with other program EIRs, CDFW recommends creating a procedure or checklist for evaluating subsequent project impacts on biological resources to determine if they are within the scope of the program EIR or if an additional environmental document is warranted. This checklist should be included as an attachment to the draft EIR. Future analysis should include all special-status species and sensitive natural communities including but not limited to species considered rare, threatened, or endangered pursuant to CEQA Guidelines, section 15380.

When used appropriately, the checklist should be accompanied by enough relevant information and reasonable inferences to support a “within the scope” of the EIR conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis should be prepared by a qualified biologist to provide the necessary supporting information. In addition, the checklist should cite the specific portions of the draft EIR, including page and section references, containing the analysis of the subsequent Project activities’ significant effects and indicate whether it incorporates all applicable mitigation measures from the draft EIR.

## **REGULATORY REQUIREMENTS**

### **California Endangered Species Act and Native Plant Protection Act**

Please be advised that a CESA ITP must be obtained if the Project has the potential to result in take<sup>1</sup> of plants or animals listed under CESA or NPPA, either during construction or over the life of the Project. If the Project will impact CESA or NPPA listed species, including but not limited to those identified in the table below, early consultation with CDFW is encouraged, as significant modification to the Project and mitigation measures may be required to obtain an ITP. Issuance of an ITP is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program.

CEQA requires a Mandatory Finding of Significance if a Project is likely to substantially restrict the range or reduce the population of a threatened or endangered species (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, & 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The Lead Agency’s FOC does not eliminate the Project proponent’s obligation to comply with CESA.

---

<sup>1</sup> Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 4 of 17

## Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also subject to notification. CDFW, as a responsible agency under CEQA, will consider the EIR for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA as the responsible agency.

## Nesting Birds

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds. Fish and Game Code sections 3503, 3503.5, and 3513 protect birds, their eggs, and nests. Fully Protected birds such as white-tailed kite (*Elanus leucurus*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and California brown pelican (*Pelecanus occidentalis californicus*), may not be taken or possessed at any time (Fish & G. Code, § 3511). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

## ENVIRONMENTAL SETTING

The draft EIR should provide sufficient information regarding the environmental setting ("baseline") to understand the Project's, and its alternative's (if applicable), potentially significant impacts on the environment (CEQA Guidelines, §§ 15125 & 15360).

CDFW recommends that the draft EIR provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and surrounding lands, including but not limited to all rare, threatened, or endangered species (CEQA Guidelines, § 15380). The draft EIR should describe aquatic habitats, such as wetlands, vernal pools, and/or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>). Fully protected, threatened or endangered, and other special-status species that are known to occur, or have the potential to occur in or near the Project area, include but are not limited to, those listed in **Attachment 1: Special-Status Species**.

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 5 of 17

Habitat descriptions and the potential for species occurrence should include information from multiple sources, such as aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; findings from positive occurrence databases such as the California Natural Diversity Database (CNDDDB); and sensitive natural community information available on the Marin County Fine Scale Vegetation Map<sup>2</sup>. Based on the data and information from the habitat assessment, the draft EIR should adequately assess which special-status species are likely to occur on or near the Project site, and whether they could be impacted by the Project.

CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: <https://wildlife.ca.gov/Conservation/Survey-Protocols>.

Botanical surveys for special-status plant species, including those with a California Rare Plant Rank (<http://www.cnps.org/cnps/rareplants/inventory/>), must be conducted during the blooming period for all species potentially impacted by the Project within the Project area and adjacent habitats that may be indirectly impacted by, for example, changes to hydrology, and require the identification of reference populations. More than one year of surveys may be necessary given environmental conditions. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants, and survey report requirements (<https://wildlife.ca.gov/Conservation/Plants>).

## **IMPACT ANALYSIS AND MITIGATION MEASURES**

The draft EIR should discuss all direct and indirect impacts (temporary and permanent), including reasonably foreseeable impacts, that may occur with implementation of the Project (CEQA Guidelines, §§ 15126, 15126.2, & 15358). This includes evaluating and describing impacts such as:

- Encroachments into riparian habitats, drainage ditches, wetlands, or other sensitive areas.
- Potential for impacts to special-status species or sensitive natural communities.
- Loss or modification of breeding, nesting, dispersal, and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g., snags, rock outcrops, overhanging banks).

---

<sup>2</sup> One Tam hosts the Marin Fine Scale Vegetation Web Map at <https://parksconservancy.maps.arcgis.com/apps/webappviewer/index.html?id=4ef2881436bc4365be881b17f69ab067>

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 6 of 17

- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence.
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The draft EIR should also identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, § 15355). Although a project's impacts may be less-than-significant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact, e.g., reduction of habitat for a special-status species, should be considered cumulatively considerable.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines direct the Lead Agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR, and mitigate potentially significant impacts of the Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.4 & 15370). This includes a discussion of impact avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with CDFW, USFWS, and the National Marine Fisheries Service. Project-specific measures should be incorporated as enforceable Project conditions to reduce impacts to biological resources to less-than-significant levels.

Fully protected species such as white-tailed kite, California Ridgway's rail, California black rail, California brown pelican, bald eagle, golden eagle, American peregrine falcon, and salt-marsh harvest mouse, may not be taken or possessed at any time (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the draft EIR should include measures to ensure complete avoidance of these species.

## **ENVIRONMENTAL DATA**

CEQA requires that information developed in EIRs and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDDB. The CNDDDB online field survey form and other methods for submitting data can be found at: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at: <https://wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
Page 7 of 17

## FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish & G. Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

If you have any questions, please contact Amanda Culpepper, Environmental Scientist, at [amanda.culpepper@wildlife.ca.gov](mailto:amanda.culpepper@wildlife.ca.gov); or Melanie Day, Senior Environmental Scientist (Supervisory), at [melanie.day@wildlife.ca.gov](mailto:melanie.day@wildlife.ca.gov).

Sincerely,

DocuSigned by:

*Erin Chappell*

B77E9A6211EF486

Erin Chappell  
Regional Manager  
Bay Delta Region

Attachment 1: Special-Status Species

ec: State Clearinghouse (SCH No. 2021120123)

Robynn Swan, CDFW Bay Delta Region, [robynn.swan@wildlife.ca.gov](mailto:robynn.swan@wildlife.ca.gov)

Arn Aarreberg, CDFW Marine Region, [arn.aarreberg@wildlife.ca.gov](mailto:arn.aarreberg@wildlife.ca.gov)

Leslie Lacko, County of Marin, [llacko@marincounty.org](mailto:llacko@marincounty.org)

Jillian Zeiger, County of Marin, [jzeiger@marincounty.org](mailto:jzeiger@marincounty.org)

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 8 of 17

### Attachment 1: Special-Status Species

Scientific Name	Common Name	Status
<b>Birds</b>		
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail	CESA and Endangered Species Act (ESA) listed as endangered; California Fully Protected species
<i>Laterallus jamaicensis coturniculus</i>	California black rail	CESA listed as threatened; California Fully Protected species
<i>Strix occidentalis caurina</i>	northern spotted owl	CESA and ESA listed as threatened
<i>Agelaius tricolor</i>	tricolored blackbird	CESA listed as threatened
<i>Haliaeetus leucocephalus</i>	bald eagle	CESA listed as endangered; California Fully Protected species; Bald and Golden Eagle Protection Act
<i>Charadrius nivosus nivosus</i>	western snowy plover	ESA listed as threatened; California Species of Special Concern (SSC)
<i>Athene cunicularia</i>	burrowing owl	SSC
<i>Aquila chrysaetos</i>	golden eagle	California Fully Protected species; Bald and Golden Eagle Protection Act
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Asio flammeus</i>	short-eared owl	SSC
<i>Circus hudsonius</i>	northern harrier	SSC
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	SSC
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	SSC
<i>Coturnicops noveboracensis</i>	yellow rail	SSC
<i>Fratercula cirrhata</i>	tufted puffin	SSC

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 9 of 17

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Elanus leucurus</i>	white-tailed kite	California Fully Protected species
<i>Falco peregrinus anatum</i>	American peregrine falcon	California Fully Protected species
<i>Pelecanus occidentalis californicus</i>	California brown pelican	California Fully Protected species
<b><i>Fish</i></b>		
<i>Hypomesus transpacificus</i>	Delta smelt	CESA listed as endangered; ESA listed threatened
<i>Spirinchus thaleichthys</i>	longfin smelt	CESA listed as threatened; candidate for ESA listing
<i>Oncorhynchus kisutch</i> pop. 4	Coho salmon south of Punta Gorda	CESA and ESA listed as endangered
<i>Oncorhynchus tshawytscha</i> pop. 7	Sacramento River winter-run Chinook salmon	CESA and ESA listed as endangered
<i>Oncorhynchus tshawytscha</i> pop. 11	Central Valley spring-run Chinook salmon	CESA and ESA listed as threatened
<i>Eucyclogobius newberryi</i>	tidewater goby	ESA listed as endangered
<i>Acipenser medirostris</i>	green sturgeon	Southern Distinct Population Segment ESA listed as threatened; SSC
<i>Oncorhynchus mykiss irideus</i> pop. 8	central California coast steelhead	ESA listed as threatened
<i>Hesperoleucus venustus subditus</i>	southern coastal roach	SSC
<i>Culpea pallasii</i>	Pacific herring	Culturally and historically important fishery managed by CDFW



Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 10 of 17

Scientific Name	Common Name	Status
<b>Amphibians</b>		
<i>Rana draytonii</i>	California red-legged frog	ESA listed as threatened; SSC
<i>Rana boylei</i>	foothill yellow-legged frog, northwest/north coast clade	SSC
<i>Dicamptodon ensatus</i>	California giant salamander	SSC
<b>Mammals</b>		
<i>Reithrodontomys raviventris</i>	salt-marsh harvest mouse	CESA and ESA listed as endangered; California Fully Protected species
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	SSC
<i>Antrozous pallidus</i>	pallid bat	SSC
<i>Lasiurus blossevillii</i>	western red bat	SSC
<i>Taxidea taxus</i>	American badger	SSC
<i>Aplodontia rufa phaea</i>	Point Reyes mountain beaver	SSC
<i>Zapus trinotatus orarius</i>	Point Reyes jumping mouse	SSC
<i>Eumetopias jubatus</i>	Steller sea lion	Marine Mammal Commission Marine Mammal Species of Special Concern
<b>Reptiles</b>		
<i>Emys marmorata</i>	western pond turtle	SSC
<b>Invertebrates</b>		
<i>Syncaris pacifica</i>	California freshwater shrimp	CESA and ESA listed as endangered

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 11 of 17

Scientific Name	Common Name	Status
<i>Icaricia icarioides missionensis</i>	Mission blue butterfly	ESA listed as endangered; California Terrestrial and Vernal Pool Invertebrate of Conservation Priority (ICP) <sup>3</sup>
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot butterfly	ESA listed as endangered; ICP
<i>Danaus plexippus</i> pop. 1	monarch - California overwintering population	ESA candidate for listing; ICP
<i>Bombus crotchii</i>	Crotch bumble bee	ICP
<i>Bombus caliginosus</i>	obscure bumble bee	ICP
<i>Bombus occidentalis</i>	western bumble bee	ICP
<i>Calicina diminua</i>	Marin blind harvestman	ICP
<i>Callophrys mossii marinensis</i>	Marin elfin butterfly	ICP
<i>Coelus globosus</i>	globose dune beetle	ICP
<i>Helminthoglypta nickliniana awania</i>	Peninsula coast range shoulderband	ICP
<i>Helminthoglypta stiversiana williamsi</i>	Williams' bronze shoulderband	ICP
<i>Icaricia icarioides parapheres</i>	Point Reyes blue butterfly	ICP
<i>Microcina tiburona</i>	Tiburon micro-blind harvestman	ICP

<sup>3</sup> The list of California Terrestrial and Vernal Pool Invertebrates of Conservation Priority was collated during CDFW's Scientific Collecting Permit rulemaking process:  
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157415&inline>

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 12 of 17

Scientific Name	Common Name	Status
<b>Plants</b>		
<i>Chloropyron molle</i> ssp. <i>molle</i>	soft salty bird's-beak	NPPA listed as rare; ESA listed as endangered; California Rare Plant Rank (CRPR) <sup>4</sup> 1B.2
<i>Delphinium bakeri</i>	Baker's larkspur	CESA and ESA listed as endangered; CRPR 1B.1
<i>Delphinium luteum</i>	golden larkspur	NPPA listed as rare; ESA listed as endangered; CRPR 1B.1
<i>Arenaria paludicola</i>	marsh sandwort	CESA and ESA listed as endangered; CRPR 1B.1
<i>Calochortus tiburonensis</i>	Tiburon mariposa-lily	CESA and ESA listed as threatened; CRPR 1B.1
<i>Castilleja affinis</i> var. <i>neglecta</i>	Tiburon paintbrush	CESA listed as threatened; ESA listed as endangered; CRPR 1B.2
<i>Chorizanthe valida</i>	Sonoma spineflower	CESA and ESA listed as endangered; CRPR 1B.1
<i>Hesperolinon congestum</i>	Marin western flax	CESA and ESA listed as threatened, CRPR 1B.1
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	CESA listed as endangered; ESA listed as threatened; CRPR 1B.1
<i>Layia carnososa</i>	beach layia	CESA and ESA listed as endangered; CRPR 1B.1
<i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	Point Reyes meadowfoam	CESA listed as endangered; CRPR 1B.2
<i>Lupinus tidestromii</i>	Tidestrom's lupine	CESA and ESA listed as endangered; CRPR 1B.1

<sup>4</sup> CRPR 1B plants are considered rare, threatened, or endangered in California and elsewhere while CRPR 4 plants are considered watch list plants that have a limited distribution in California. Further information on CRPR ranks is available in CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>) and on the California Native Plant Society website (<https://www.cnps.org/rare-plants/cnps-rare-plant-ranks>).

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 13 of 17

Scientific Name	Common Name	Status
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	CESA and ESA listed as endangered; CRPR 1B.1
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	CESA listed as threatened; CRPR 1B.1
<i>Streptanthus glandulosus</i> ssp. <i>niger</i>	Tiburon jewelflower	CESA listed as endangered; CRPR 1B.1
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes blennosperma	NPPA listed as rare; CRPR 1B.2
<i>Ceanothus masonii</i>	Mason's ceanothus	NPPA listed as rare; CRPR 1B.2
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	NPPA listed as rare; CRPR 1B.1
<i>Trifolium polyodon</i>	Pacific Grove clover	NPPA listed as rare; CRPR 1B.1
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	ESA listed as endangered, CRPR 1B.1
<i>Lasthenia conjugens</i>	Contra Costa goldfields	ESA listed as endangered; CRPR 1B.1
<i>Trifolium amoenum</i>	two-fork clover	ESA listed as endangered; CRPR 1B.1
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	CRPR 1B.1
<i>Agrostis blasdalei</i>	Blasdale's bent grass	CRPR 1B.2
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	CRPR 1B.2
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	CRPR 1B.2
<i>Arctostaphylos montana</i> ssp. <i>montana</i>	Mt. Tamalpais manzanita	CRPR 1B.3
<i>Arctostaphylos virgata</i>	Marin manzanita	CRPR 1B.2

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 14 of 17

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	CRPR 1B.2
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	CRPR 2B.1
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	coastal bluff morning-glory	CRPR 1B.2
<i>Campanula californica</i>	swamp harebell	CRPR 1B.2
<i>Cardamine angulata</i>	seaside bittercress	CRPR 2B.1
<i>Carex leptalea</i>	bristle-stalked sedge	CRPR 2B.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	CRPR 2B.2
<i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	Humboldt Bay owl's-clover	CRPR 1B.2
<i>Castilleja leschkeana</i>	Point Reyes paintbrush	CRPR 1A
<i>Ceanothus decornutus</i>	Nicasio ceanothus	CRPR 1B.2
<i>Ceanothus gloriosus</i> var. <i>porrectus</i>	Mt. Vision ceanothus	CRPR 1B.3
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	CRPR 1B.2
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spineflower	CRPR 1B.2
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	CRPR 2B.1
<i>Cirsium andrewsii</i>	Franciscan thistle	CRPR 1B.2
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>	Mt. Tamalpais thistle	CRPR 1B.2

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 15 of 17

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Clarkia concinna</i> ssp. <i>raichei</i>	Raiche's red ribbons	CRPR 1B.1
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	CRPR 1B.2
<i>Collinsia multicolor</i>	San Francisco collinsia	CRPR 1B.2
<i>Dirca occidentalis</i>	western leatherwood	CRPR 1B.2
<i>Entosthodon kochii</i>	Koch's cord moss	CRPR 1B.3
<i>Erigeron supplex</i>	supple daisy	CRPR 1B.2
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	CRPR 1B.2
<i>Erysimum concinnum</i>	bluff wallflower	CRPR 1B.2
<i>Fissidens pauperculus</i>	minute pocket moss	CRPR 1B.2
<i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Marin checker lily	CRPR 1B.1
<i>Fritillaria liliacea</i>	fragrant fritillary	CRPR 1B.2
<i>Gilia capitata</i> ssp. <i>chamissonis</i>	blue coast gilia	CRPR 1B.1
<i>Gilia capitata</i> ssp. <i>tomentosa</i>	woolly-headed gilia	CRPR 1B.1
<i>Gilia millefoliata</i>	dark-eyed gilia	CRPR 1B.2
<i>Helianthella castanea</i>	Diablo helianthella	CRPR 1B.2
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	congested-headed hayfield tarplant	CRPR 1B.2
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	CRPR 1B.2
<i>Heteranthera dubia</i>	water star-grass	CRPR 2B.2

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 16 of 17

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Horkelia marinensis</i>	Point Reyes horkelia	CRPR 1B.2
<i>Hypogymnia schizidiata</i>	island tube lichen	CRPR 1B.3
<i>Kopsiopsis hookeri</i>	small groundcone	CRPR 2B.3
<i>Lasthenia californica</i> <i>ssp. bakeri</i>	Baker's goldfields	CRPR 1B.2
<i>Lasthenia californica</i> <i>ssp. macrantha</i>	perennial goldfields	CRPR 1B.2
<i>Leptosiphon rosaceus</i>	rose leptosiphon	CRPR 1B.1
<i>Lessingia hololeuca</i>	woolly-headed lessingia	CRPR 3
<i>Lessingia micradenia</i> <i>var. micradenia</i>	Tamalpais lessingia	CRPR 1B.2
<i>Lilium maritimum</i>	coast lily	CRPR 1B.1
<i>Microseris paludosa</i>	marsh microseris	CRPR 1B.2
<i>Monardella sinuata</i> ssp. <i>nigrescens</i>	northern curly-leaved monardella	CRPR 1B.2
<i>Navarretia rosulata</i>	Marin County navarretia	CRPR 1B.2
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	CRPR 1B.2
<i>Piperia elegans</i> ssp. <i>decurtata</i>	Point Reyes rein orchid	CRPR 1B.1
<i>Plagiobothrys glaber</i>	hairless popcornflower	CRPR 1A
<i>Polemonium carneum</i>	Oregon polemonium	CRPR 2B.2
<i>Polygonum marinense</i>	Marin knotweed	CRPR 3.1
<i>Quercus parvula</i> var. <i>tamalpaisensis</i>	Tamalpais oak	CRPR 1B.3

Ms. Rachel Reid  
 County of Marin  
 January 20, 2022  
 Page 17 of 17

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Rhynchospora californica</i>	California beaked-rush	CRPR 1B.1
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	CRPR 1B.2
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	CRPR 1B.2
<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Marin checkerbloom	CRPR 1B.1
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	purple-stemmed checkerbloom	CRPR 1B.2
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	CRPR 2B.2
<i>Stebbinsoseris decipiens</i>	Santa Cruz microseris	CRPR 1B.2
<i>Streptanthus anomalus</i>	Mount Burdell jewelflower	CRPR 1B.1
<i>Streptanthus batrachopus</i>	Tamalpais jewelflower	CRPR 1B.3
<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>	Mt. Tamalpais bristly jewelflower	CRPR 1B.2
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	CRPR 1B.2
<i>Triquetrella californica</i>	coastal triquetrella	CRPR 1B.2



## Hall, Chelsea

---

**From:** Reid, Rachel  
**Sent:** Monday, January 24, 2022 12:27 PM  
**To:** EnvPlanning  
**Subject:** Fw: Marin County Housing and Safety Update NOP - Caltrans Comments  
**Attachments:** Marin County Housing and Safety NOP Caltrans.pdf

---

**From:** Ayon, Llisel@DOT <Llisel.Ayon@dot.ca.gov>  
**Sent:** Thursday, January 20, 2022 1:33 PM  
**To:** Reid, Rachel <rreid@marincounty.org>  
**Cc:** OPR State Clearinghouse <State.Clearinghouse@opr.ca.gov>  
**Subject:** Marin County Housing and Safety Update NOP - Caltrans Comments

Hello Rachel,

Thank you for including Caltrans in the review process for this project. The following comments are based on our review of the NOP. If you have any questions regarding these comments or require any additional information, please feel free to contact me at this email address or the phone number listed below.

Thank you,

**Llisel Ayon**  
Associate Transportation Planner  
Local Development Review  
California Department of Transportation – District 4  
Cell: (510) 506-6184



## California Department of Transportation

DISTRICT 4  
OFFICE OF TRANSIT AND COMMUNITY PLANNING  
P.O. BOX 23660, MS-10D | OAKLAND, CA 94623-0660  
[www.dot.ca.gov](http://www.dot.ca.gov)



January 20, 2022

SCH #: 2021120123  
GTS #: 04-MRN-2021-00224  
GTS ID: 24967  
Co/Rt/Pm: MRN/VAR/VAR

Rachel Reid  
Environmental Planning Manager  
County of Marin  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903

### **Re: Housing and Safety Element Update Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)**

Dear Rachel Reid:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Marin County Housing and Safety Element Update. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the December 2021 NOP.

#### **Project Understanding**

The County of Marin is in the process of updating the Housing and Safety Elements of the Countywide Plan (the County's General Plan). The Countywide Plan serves as the guiding vision for the future of unincorporated Marin. These Elements focus on housing needs and conditions, and climate change adaptation measures including wildfire, sea level rise and flooding concerns.

#### **Travel Demand Analysis**

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide ([link](#)).

If the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in align with the City's VMT policy. Projects that do not meet the screening criteria should include a detailed VMT analysis in the DEIR, which should include a VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

### **Lead Agency**

As the Lead Agency, the County of Marin is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email [LDR-D4@dot.ca.gov](mailto:LDR-D4@dot.ca.gov).

Sincerely,



MARK LEONG  
District Branch Chief  
Local Development Review

c: State Clearinghouse

## Hall, Chelsea

---

**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Thursday, January 13, 2022 10:56 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Laura Lovett.

The question that was asked is:

Thank you for asking for input. The new housing element should reflect three revolutions in thinking about urban and suburban areas: 1. "Spare plus Share." No longer is environmental conservation something that is done "over there" in parks and preserves, but something to which urban and suburban areas must also make important contributions. No longer are these areas to be treated as "ecological deserts." Please require that native trees be planted on all streetscapes and in public gardens--these are essential to retaining what biodiversity we have and not optional choices. 2. "Health is Here." Now, as more than half the world's population lives in urban and suburban areas, making sure these are high-functioning ecosystems is more important than ever. The impact of the quality of these ecosystems on human mental and physical health has been made more clear by the current pandemic. How much green space is there and is it planted with something other than lawn? will it absorb water when we get heavy rains or add to stormwater runoff? What materials are chosen for buildings and hardscape? Can we reduce the huge impact of concrete everywhere? 3. "Smart Growth plus Ecological Design." Although efforts to increase human density in some areas has been met with resistance, this is because the widely varying environmental quality of high-density developments has not received enough attention. Greater attention to ecological design can increase the environmental quality of smart growth. Please give tax breaks and bonus footage to those who DO MORE FOR THE ENVIRONMENT rather than contractors who are trying to squeeze top dollar from every acre. It should also reflect current thinking about our world environmental crisis, which includes severe biodiversity loss, climate change and increased pollution. Laura Lovett, Marin chapter, California Native Plant Society

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

---

**From:** Laura Lovett <llovett@earthlink.net>  
**Sent:** Sunday, January 23, 2022 3:06 PM  
**To:** EnvPlanning  
**Subject:** Comments on the New Housing Element from CNPS Marin chapter  
**Attachments:** MHE CNPS Jan 2022.pdf

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY  
PLANNING DIVISION  
PUBLIC SCOPING SESSION  
ENVIRONMENTAL IMPACT REPORT FOR  
HOUSING AND SAFETY ELEMENT UPDATES  
WRITTEN COMMENT FORM  
January 11, 2022

Name/Affiliation: California Native Plant Society, Marin Chapter

Address: Post Office Box 1408

City Mill Valley CA

Zip Code: 94942-1408

Telephone: N/A

*Please provide comments and concerns regarding the environmental effects of the proposed project or the environmental process below.*

**The new housing element should reflect three revolutions in thinking about urban and suburban areas:**

1. Spare plus Share. No longer is environmental conservation something that is done “over there” in parks and preserves, but something to which urban and suburban areas must also make important contributions. No longer are these areas to be treated as “ecological deserts.” These are a few ideas:
  - To increase biodiversity, street trees and public plantings should be at least 70% native plants;
  - Use of green materials should be encouraged/required, particularly alternative forms of concrete that are less polluting, and catch basins and permeable paving that lets water soak into the ground.
2. Smart Growth plus Ecological Design. Efforts to increase human density in some areas has been met with resistance, which may be due to the widely varying environmental quality of high-density developments. Greater attention to ecological design can increase the environmental quality of smart growth.
3. Climate Change. The new Housing Element should also reflect current thinking about our world environmental crisis. The recent United Nations report *Making Peace with Nature* has identified the three main threats to our global environment. Each of these must get adequate attention:
  - Biodiversity Loss. Conservation and restoration of native species must be a priority.
  - Climate Change. Reduced emission and increased carbon sequestration must be important goals.
  - Increased Pollution. Air pollution, water pollution and solid waste production must be reduced.

**Native plants can play key roles in improving environmental quality in these areas. Following are some examples.**

1. Native plants are the foundations of the food webs for all other living things. Recent studies show that when the proportion of native plants falls below 70%, there is a great drop in the abundance and

diversity of insects, birds and other life forms. Most Marin neighborhoods are well below this threshold. The county should be the biggest proponent of the use of native plants in landscaping, thereby setting the example for other cities and towns.

2. Properly selected native plants continue to produce biomass even under conditions of recurring drought. Plants sequester carbon through photosynthesis, removing it from the atmosphere. The massive removal of mature trees, in particular, has added to greenhouse warming. Use of native trees in public spaces that are bought and paid for with our tax dollars should be a requirement, not an option.

3. Native plants help to reduce pollution. Because they support diverse food webs, they make integrated pest management (IPM) more efficient, thus reducing the need for pesticides. Largely evergreen native tree and shrub canopies intercept winter rainfall that then infiltrates and percolates into and through the soil, reducing erosion and sedimentation. In sharp contrast to the negative impacts of lawns, pavement and artificial turf, the deep roots of many native plants, including native perennial grasses, also help us reap these same benefits.

**In sum, increasing the abundance and diversity of native plants should be a main goal of the new Housing Element.**

*Please use backside of page for additional comments, if needed. This comment form may be emailed to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) or mailed to the attention of Rachel Reid, prior to January 24, 2022, at the Marin County Community Development Agency - Planning Division, 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903.*

## Hall, Chelsea

---

**From:** pgsilva <pgsilva@sonic.net>  
**Sent:** Monday, January 24, 2022 2:45 PM  
**To:** EnvPlanning  
**Subject:** Marin Housing Element Scoping Comments  
**Attachments:** MCBIMarinHousingElementScoping24Jan2022.pdf

Dear Rachel -

Attached please find comments for the Housing Element scoping process, which I am submitting on behalf of the Marin Biodiversity Corridor Initiative (MBCI). As indicated at the bottom of the form, we will be happy to provide more documentation for our comments if that could be useful.

All the best,

Paul

--

Dr. Paul G. da Silva

415-461-3210

"What have we done today to address the global diversity crisis?"



**MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY  
PLANNING DIVISION  
PUBLIC SCOPING SESSION  
ENVIRONMENTAL IMPACT REPORT FOR  
HOUSING AND SAFETY ELEMENT UPDATES  
WRITTEN COMMENT FORM  
January 11, 2022**

**Name/Affiliation:** Dr. Paul da Silva/ Marin Biodiversity Corridor Initiative  
(MBCI)

**Address:** 55 Corte Solano

**City:** Larkspur    **Zip Code:** 94904-2328    **Telephone:** 415-461-3210

***Please provide comments and concerns regarding the environmental effects of the proposed project or the environmental process below.***

Recent international, national, state and local developments have highlighted the importance of our global biodiversity crisis and the need for all governments and agencies to address it in their planning processes. The United Nations *Making Peace with Nature* report named biodiversity loss as one of our three main environmental threats, along with climate change and pollution. The Conference of Parties (COP-15), soon to resume in Kunming, China, is bringing people together from all over the world to come up with specific actions. The California Biodiversity Initiative has prioritized action at the state level, while the designation of the first Marin Biodiversity Day last October 27<sup>th</sup> by the Marin County Board of Supervisors is one example of local recognition of the crisis.

Various iterations of the Marin Countywide Plan have recognized different corridors within the county. In the 1970's the predominant thinking was that the western, more rural corridors were the main areas for conservation, while the eastern, more urbanized corridors were where conservation would be sacrificed in favor of providing the bulk of the housing for the population. This paralleled the prevailing scientific consensus that urban and suburban areas had little conservation value and the shared understanding that the health of the people living in these areas could best be improved by giving them access to recreation in other, more conserved areas.

Much has changed since the 1970's. There is now growing scientific recognition that urban and suburban areas can and must play important roles in biodiversity conservation. There is also increased awareness of the connection between the biodiversity of urban and suburban areas and the health of people who live in them. Inequities in biodiversity are correlated with inequities in key human health variables.

Increased focus on biodiversity brings with it not only the opportunities to improve human and environmental health, but also to deal with other important challenges such as heightened fire danger, increased population density, and water scarcity (particularly in light of recent extreme drought conditions that are exacerbated by increasing population density).

*Key actions that could increase biodiversity in these areas are:*

1. Increase total amount of areas dedicated to living plants as opposed to structures, pavement, “dead” roofs, and artificial turf.
2. Increase total proportions of native plants. Although critical thresholds for total biodiversity support are around 70%, most Marin neighborhoods fall short of that; many are “biodiversity deserts.” Non-native turf and exotic plants have evolved with different weather, soil, and water requirements and are more likely to need supplemental water (which taxes our increasing limited water supply), fertilizers (which can pollute water) and pesticides (which threaten beneficial, non-target insects). Looking critically at most yards in Marin, it is not a stretch to say that no Marin neighborhood currently meets the 70% threshold.
3. Increase heterogeneity of habitat. This includes not only the diversity of the plants, but also the provision of bare soil for ground-nesting bees and the inclusion of swales and other water features for wildlife in general. Many of these factors can also be important in reducing fire danger and improving human health.

(Background references and documentation are available on request.)

**Please use backside of page for additional comments, if needed. This comment form may be emailed to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) or mailed to the attention of Rachel Reid, prior to January 24, 2022 , at the Marin County Community Development Agency - Planning Division, 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903.**

## Hall, Chelsea

---

**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Tuesday, January 4, 2022 3:46 PM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Suzanne Sadowsky.

The question that was asked is:

Will the scoping session address environment issues pertaining to stream conservation in the San Geronimo Valley, waste water treatment issues regarding septic failures the Valley and possibilities of a new community waste treatment facility in the Valley (Woodacre Flats) and also alternatives to water based residential toilets, e.g. incinerated toilets, and possibilities for expanded grey water systems.,

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

---

**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Monday, January 10, 2022 9:42 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Jenny Silva.

The question that was asked is:

The housing element process and environmental review is an ideal opportunity for Marin to reconsider land use policies to reduce our car dependency. Car emissions create 40% of greenhouse emissions. Marin's development has put in place land use rules that have created a car dependent culture. I encourage Marin to look at options for reducing car use, particularly in terms of building more walkable communities. Safe routes to school have encourage students to walk or bike to school. Enabling more kids to live within walking distance of our schools would have the biggest impact. Retail should not be separated from residential. People love having a nearby corner store. Walkable neighborhoods are highly desired. There is much we can do with zoning and land use policy to reduce our dependence on cars.

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

---

**From:** Kathryn Peisert <kathryn@peisert.net>  
**Sent:** Tuesday, January 11, 2022 8:06 AM  
**To:** EnvPlanning  
**Subject:** Housing plan

Questions to address at the forum today (other than the obvious environmental impacts):

1. Where will the extra water come from for these new residents? What kinds of collaboration and strategies are being worked out with the water districts?
2. Traffic congestion issues — how can we encourage the building of new housing near public transportation and in turn, provide more, better, faster access to public transportation so people will actually ride? (I was also wondering if there have been any data on people being more likely to contract COVID if they take public transportation — if we can very publicly dispel fears about that perhaps ridership would go up.)
3. Can the new housing be carbon neutral and/or LEED certified? Solar panels, gray water systems, all electric appliances, recycling and compost options so easy to do that it's harder to throw things in the trash, and built with sustainable materials?
4. Wouldn't it be amazing if the people who need jobs the most could be hired to help do the building?
5. How will we guarantee that the new housing will actually solve problems for no and low-income people, and what are the guarantees that the county won't overpay the developers? Let's carefully outline a plan that can be an economic win for everyone involved, not just the developers.
6. Is there a review of the current empty commercial spaces, to determine how viable those are to remain commercial when COVID is over — could some of those spaces become housing instead? (Does BioMarin need all of that office space still?)

I'm sure there's more...the idea being that new housing impacts just about everything else. So how to minimize those impacts and do it in a smart way so that the plan actually helps the problem it is trying to solve, rather than bringing in more rich people to Marin and making prices go even higher.

Thanks,  
Kathryn  
San Rafael

## Hall, Chelsea

---

**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Tuesday, January 11, 2022 1:35 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Mary Miller.

The question that was asked is:

Please increase affordable development in infill areas in Southern Marin. This will reduce noise and air pollution from commuters traveling from Sonoma and Marin to jobs in SF. Bus and ferry travel to SF from there is faster and thus more likely to be actually used.

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

---

**From:** pbn@sf1.net  
**Sent:** Thursday, January 13, 2022 3:34 PM  
**To:** EnvPlanning  
**Subject:** Housing and Safety Elements SURVEY??!

Peter Newman would like information about:

Planning sent me a postcard with a QR code link to the Housing and Safety Elements Short Survey... but I am trying to access the survey via your web site (on my laptop) -- and it appears the survey is not accessible on-line??!

The county should make the survey accessible by computer as well as by smart phone -- as some of us older citizens may not be able or willing to access the survey via their phones. I am technically capable of doing that, but the screen is too small for me and I want to be able to view the survey on my computer.

There is no excuse, other than a lapse of judgement, that can justify only making the survey accessible by a QR code used by phones only.

Peter Newman

## Hall, Chelsea

---

**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Monday, January 24, 2022 3:30 PM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Neighbor.

The question that was asked is:

As the more detailed study of environmental and infrastructure constraints is developed, I would like to point out specific constraints in the area around McPhail's School in Santa Venetia: Biological Resources – the area at and surrounding the McPhail's school site in Santa Venetia is extremely rich in biodiversity; and, having the same habitat and makeup as what we have in China Camp State park less than 1 mile away, the McPhail's site now serves as a defacto sanctuary for wild animals of a very diverse nature. The long-term neglect by the San Rafael School District has for most intents and purposes resulted in the return of this land to its natural state. Geology and Soils – the land underlying a significant portion of the McPhail's school site was created by a landfill project in the late 1950's. Liquefaction and potential instability is a possible concern, especially if the substrate is similar to the surrounding marsh that it was before the fill was added. Hydrology and Water Quality – the land at McPhail's is near or just above sea level; when the tide comes in via Gallinas Creek, the water floods areas near or at the edge of the property. As a proximate neighbor to the property for almost 20 years, I am seeing higher levels of flooding year after year. There is also a potential impact to the broader Santa Venetia neighborhood, which regularly battles flooding with a system of levies and pump stations throughout the entire area. Land Use and Planning – The San Rafael School District, which owns the 14 acres at the McPhail's school site, has long neglected this property, with only a few and sudden starts and stops about how it would improve the property and make better use of the land and buildings. The neighbors have long-tried to work with SRSD and Marin County to establish a plan, with several very feasible ideas having been proposed, but to no avail. The neighbors overall feel exasperated and frustrated that SRSD has not been a better partner with the community, so I suspect there will be a very strong pushback from the community if some of the land-use ideas that get proposed for McPhail's that do not align with already discussed and accepted ideas, such as Wild Care, park and recreation, education, and others. Also, the McPhail's site is specifically discussed in the Santa Venetia Community Plan. Any land use planning discussion for McPhail's must start with a reference to the SVCP. Public Services – there are essentially no public services near the McPhail's area, such as shopping, grocery, public transportation, health care; other than a single micro-bus service on Vendola Drive, any access to these types of services requires private transportation 2 miles west, toward the Civic Center and 101. Transportation – as mentioned above, the only public transportation servicing the McPhail's area is an infrequent small-bus service on Vendola Drive. There is also a history of traffic congestion along North San Pedro Road with private vehicle congestion along with school buses traffic to Santa Venetia school, JCC and other high-traffic areas along NSPR. Thanks, Jon Metcalf

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team



MARIN COUNTY HOUSING AND SAFETY ELEMENT  
NOP SCOPING MEETING – Tuesday, January 11, 2022 6:00-8:00pm

Jack Krystal 06:19 PM Will the studies include future housing on the bay or other water bodies.

A: Yes, the County has a large number of units to build. This will also be informed by Safety Element location/site findings.

JK – Water bodies? Plan and execute for affordable and workforce housing. Design review members, need to come up with a plan with EIR Take future conditions into account.

Yes

Suzanne Sadowsky 06:27 PM Will the EIR address septic issues in the San Geronimo Valley and stream conservation ordinance that is being developed?

A: In those areas, yes. The stream ordinance is not in effect now, but planning commission and Board of Supervisors hearings will occur. Marin has restrictions on development within the Stream Conservation Area zones. The new SDG will likely be stricter than the than current requirements now out so to the degree that it constrains future development, that would be something that the housing element would take into effect.

jim sternberg 06:29 PM will the scope of this project include addressing sea level rise issues in existing housing areas such as Tam Valley?

A: Yes, this is a vulnerability and will be evaluated. SLR can be a hazard and will be evaluated in the vulnerability assessment. The Safety and Housing elements would interact that these points.

Pamela Morris 18:34:29 Can a schedule be made available that identifies what is the scale schedule for the cities and towns, so that the issues can be looked at holistically and combined.

susan Stompe 06:30 PM Will the EIR be separate for housing or safety, or combined?

A: Together

Matthew Estipona 06:36 PM How will the county engage with the access and functional needs community to ensure that some housing stock is allocated for affordable and accessible units?

A: The housing element includes income level consideration, special needs populations and folks with disabilities. Yes, the county will specifically analyze that category of person, specifically their needs and plan for housing to meet those needs.

*This page is intentionally blank.*

# Appendix B: Background Project Information

---

*This page is intentionally blank.*

# CHAPTER 5: GOALS, POLICIES, AND PROGRAMS

## Overview

State law requires each jurisdiction to address how it will satisfy the objectives for new residential units as represented by the Regional Housing Needs Allocation (RHNA). Means of achieving the development of these units should be outlined through policies and programs in the Housing Element.

Marin County's housing policies and programs have been revised to reflect the major themes identified through the County's community outreach process and a critical evaluation of the programs and policies from the 2015 Housing Element (found in Appendix B: Evaluation of 2015 Housing Element Programs). Implementing programs are grouped by the housing goals described below. Additionally, under AB 686, policies and programs must be examined under the lens of affirmatively furthering fair housing and a commitment to specific meaningful actions (Appendix D: Affirmatively Furthering Fair Housing).

### **Goal 1: Use Land Efficiently**

Use Marin's land efficiently to meet housing needs and implement smart and sustainable development principles.

### **Goal 2: Meet Housing Needs through a Variety of Housing Choices**

Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

### **Goal 3: Ensure Leadership and Institutional Capacity**

Build and maintain local government institutional capacity and monitor accomplishments to respond to housing needs effectively over time.

### **Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation**

Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.

Policies are organized around these four central goals, with an emphasis on facilitating development of housing affordable to lower and moderate income households in Marin. Strategies to aid in achieving these goals include:

- Provide clear standards and incentives for affordable and special needs housing developments to minimize risk and costs to funders and developers.
- Minimize discretionary review; streamline the permitting process.
- Establish programs appropriate to various Marin locations (urban vs. rural) and be responsive to the local community.

These ideas have been carried through in the Housing Element update to be implemented with a series of programs. In direct response to public input, these new programs have been included in the 2023-2031 Housing Element:

- Program 5: SB 9 Mapping Tool
- Program 7: Religious and Institutional Facility Housing Overlay
- Program 17: Housing for Seniors
- Program 18: Short-Term Rentals
- Program 31: Tenant Protection Strategies
- Program 32: Community Engagement

Upon adoption of the Housing Element, the County will provide it to all water and sewer service districts and notify all districts of the requirement to prioritize water and sewer service allocation for new affordable housing development (Government Code Section 65589.7).

## Goals and Policies

### Housing Goal 1: Use Land Efficiently

Use Marin's land efficiently to meet housing needs and to implement smart and sustainable development principles.

#### Policy 1.1: Land Use

Enact policies that encourage efficient use of land to foster a range of housing types in our community.

#### Policy 1.2: Regional Housing Needs Assessment

Maintain an adequate inventory of residential and mixed-use sites to fully accommodate the County's RHNA by income category throughout the planning period.

#### Policy 1.3: Housing Sites

Recognize developable land as a scarce community resource. Protect and expand the

supply and residential capacity of housing sites, particularly for lower income households.

#### **Policy 1.4: Development Certainty**

Promote development certainty and minimize discretionary review for affordable and special needs housing through amendments to the Development Code.

#### **Policy 1.5: Design, Sustainability, and Flexibility**

Enact programs that facilitate well designed, energy efficient development and flexibility of standards to encourage outstanding projects.

### **Housing Goal 2: Meet Housing Needs through a Variety of Housing Choices**

Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

#### **Policy 2.1: Special Needs Groups**

Expand housing opportunities for special needs groups, including seniors, people living with disabilities (including mental, physical, and developmental disabilities), agricultural workers, individuals and families experiencing homelessness, single-parent families, large households, lower income (including extremely low-income) households, and other persons identified as having special housing needs in Marin County.

#### **Policy 2.2: Supportive Services**

Link housing to Department of Health and Human Services programs in order to coordinate assistance to people with special needs.

#### **Policy 2.3: Workforce Housing**

Implement policies that facilitate housing opportunities to meet the needs of Marin County's workforce, especially those earning lower incomes.

#### **Policy 2.4: Incentives for Affordable Housing**

Continue to provide a range of incentives and tools to ensure development certainty and cost savings for affordable housing providers.

#### **Policy 2.5: Preserve Existing Housing**

Protect and enhance the housing we have and ensure that existing affordable housing remains affordable.

### **Policy 2.6: Preserve Permanent Housing Inventory**

Preserve our housing inventory for permanent residential uses. Discourage or mitigate the impact of short-term rentals and units unoccupied for extended periods of time.

### **Housing Goal 3: Ensure Leadership and Institutional Capacity**

Build and maintain local government institutional capacity and monitor accomplishments to respond to housing needs effectively over time.

#### **Policy 3.1: Community Participation**

Maintain an open channel of communications among the community, County staff, and decision makers. Ensure inclusive and meaningful efforts are undertaken to obtain input from diverse groups in the community. When needed, employ additional efforts to include those that typically excluded or under-represented.

#### **Policy 3.2: Coordination**

Take a proactive approach in local housing coordination, policy development, and communication. Share resources with other agencies to effectively create and respond to opportunities for achieving housing goals.

#### **Policy 3.3: Research, Monitoring, and Evaluation**

Perform effective management of housing data relating to Marin County housing programs, production, and achievements. Monitor and evaluate housing policies on an ongoing basis and respond expeditiously to changing housing conditions and needs of the population over time.

#### **Policy 3.4: Funding**

Actively and creatively seek ways to increase funding resources for affordable and special needs housing.

### **Housing Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation**

Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.

#### **Policy 4.1: Tenant Protection**

Implement policies and actions to protect tenants from unlawful evictions as well as direct and indirect (economic) displacement, and to promote greater education around tenants' rights.



---

### **Policy 4.2: Fair Housing Outreach and Education**

Proactively outreach to and educate the community about fair housing rights and responsibilities.

### **Policy 4.3: Affirmatively Further Fair Housing**

Ensure that the County's land use, development, and housing policies further the goal of equal access to housing opportunities.

## **Implementing Programs**

A housing program can implement more than one goal and multiple policies. Furthermore, some programs and actions may target specific areas of implementation in order to bridge existing service gaps, access to resources, and disproportionate housing needs.

### **Housing Supply**

#### **Program 1: Adequate Sites for RHNA and Monitoring of No Net Loss**

The County of Marin has been allocated a need of 3,569 units (1,100 very low income, 634 low income, 512 moderate income, and 1,323 above moderate income units). Based on projected ADUs and entitled projects, the County has met 475 of its RHNA, with a remaining RHNA of 3,094 units (1,458 lower income, 428 moderate income, and 1,208 above moderate income units).

To accommodate this remaining RHNA, the County has identified an inventory of sites with potential for redevelopment over the eight-year planning period. The inventory includes sites that can accommodate additional housing (689 units) under current Countywide Plan (CWP) and Development Code. The inventory also includes sites that will be rezoned/upzoned concurrent with this Housing Element update. Sites identified for rezoning/upzoning can accommodate 2,677 units (see Table H-5.1). The County is committed to redesignating and rezoning accordingly by January 31, 2023. Appendix C contains a detailed parcel listing of properties in the inventory, including those that will be redesignated/rezoned concurrent with the Housing Element update.

**Table H-5.1: Summary of Areas to be Rezoned**

Existing Zoning	Acreage	Parcels	RHNA Units
Agriculture and Conservation	288	3	275
Agriculture Limited	339	11	911
Agriculture Residential Planned	84	4	127
Planned Commercial	4	1	100
Public Facilities	46	7	224
Residential Agriculture	10	3	31
Residential Commercial Multiple Planned	16	20	241
Residential Multiple Planned	616	14	245
Residential Single Family	10	14	156
Residential Single Family Planned	29	28	293
Resort and Commercial Recreation	1	1	36
Retail Business	2	2	36
Village Commercial Residential	0	1	2
Total	1,445	109	2,677

To ensure that the County complies with Government Code Section 65863 (No Net Loss), the County will monitor the use of residential and mixed-use acreage included in the sites inventory to ensure an adequate inventory is available to meet the County’s RHNA obligations throughout the planning period. To ensure sufficient residential capacity is maintained to accommodate the RHNA, the County will develop and implement a formal, ongoing, project-by-project evaluation procedure pursuant to Government Code Section 65863. Should an approval of development result in a reduction of residential capacity below what is needed to accommodate the remaining need for households at an income level, the County will identify replacement sites as part of the findings for project approval, or if necessary, rezone sufficient sites to accommodate the shortfall and ensure “no net loss” in capacity to accommodate the RHNA within six months.

<p>Specific Actions and Timeline</p>	<ul style="list-style-type: none"> <li>▪ Complete redesignation/rezoning of 1,445 acres as outlined in Table H-5.1 to fully accommodate the RHNA. Redesignation and rezoning for adequate sites is being taken concurrently with the Housing Element update and to be completed prior to Housing Element adoption before January 31, 2023. Specifically, the County will completely revamp the Housing Opportunity sites (HOD) policy language in the CWP to outline: <ul style="list-style-type: none"> <li>○ Allowable density</li> <li>○ Maximum and minimum number of units</li> <li>○ Site constraints if any</li> <li>○ Objective Design Standards category</li> </ul> </li> <li>▪ By the end of 2022, amend the CWP to adjust the Inland Rural/City-Center corridor boundary and to ensure consistency between CWP and zoning districts.</li> <li>▪ Ongoing, maintain an inventory of the available sites for residential development and make it available on County website. Update sites inventory annually to reflect status of individual sites.</li> <li>▪ By January 2024, implement a formal evaluation procedure pursuant to Government Code Section 65863 to monitor the development of vacant and nonvacant sites in the sites inventory and ensure that adequate sites are available to meet the remaining RHNA by income category.</li> </ul>
<p>Primary Responsible Departments</p>	<p>Housing</p>
<p>Funding Sources</p>	<p>General Fund</p>
<p>Relevant Housing Policies</p>	<p>1.1, 1.2, and 1.3</p>

**Program 2: By Right Approval**

Pursuant to Government Code Section 65583.2, reusing the following types of sites in the County’s sites inventory for lower income RHNA are subject to by-right approval exempt from CEQA and subject only to design review based on objective standards, when a project includes 20 percent of the units affordable to lower income households and no subdivision is proposed:

- Vacant sites that were identified in the County’s 4<sup>th</sup> and 5<sup>th</sup> cycles Housing Element as sites for lower income RHNA; and
- Nonvacant sites that were identified in the County’s 5<sup>th</sup> cycle Housing Element as sites for lower income RHNA.

Parcels that are subject to by-right approval pursuant to State law are identified in Appendix C.

In addition, the County may consider expanding the scope of streamlining:

- For sites not subject to Section 65583.2 - projects that include 20 percent of the units affordable to homeowners at 60 percent AMI or to renters at 50 percent AMI; and/or
- 100 percent affordable projects on any Housing Element sites.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2022, concurrent with the Development Code and CWP update to provide adequate sites for RHNA (see Program 1), update the Development Code to address the by-right approval requirements.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.3 and 1.4

### Program 3: Replacement Housing

Development on all nonvacant sites designated in the Housing Element, at all income levels, that contain existing residential units, or units that were rented in the past five years, is subject to the replacement housing requirements specified in Government Code sections 65583.2 and 65915.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2022, as part of the redesignation and rezoning being undertaken concurrently with the Housing Element update (see Program 1, update the Development Code to address the replacement requirements).</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 1.3, and 2.5

### Program 4: Accessory Dwelling Units

Accessory Dwelling Units (ADUs) are an important resource to provide lower and moderate income housing in the unincorporated County. To facilitate ADU production, the County will:

- Dedicate a specific page on the County website to provide information and resources for ADU construction.
- Dedicate an ombudsman position to help applicants navigate the pre-development phase of ADU construction.
- Develop an ADU construction guide to clarify the permit application process and requirements. The guide will outline the required review by various departments and fees required.
- Provide financial assistance to income-qualified property owners to build ADUs using State funds (such as Cal HOME funds).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Permit on average 35 ADUs or JADUs per year (280 ADUs or JADUs over eight years).</li> <li>Update ADU webpage semi-annually, or more frequently as needed, to ensure information addresses questions</li> </ul>
-------------------------------	--

	<p>raised by applicants.</p> <ul style="list-style-type: none"> <li>▪ By December 2023, create an ombudsman position to help property owners navigate the ADU pre-development process.</li> <li>▪ Annually, pursue and allocate financial incentives to support ADU construction with the annual goal of assisting 5 lower income households with ADU construction or deed restricting 5 ADUs as affordable housing.</li> <li>▪ By January 31, 2027, review the production of ADUs to verify that Housing Element projections are accurate. If production estimates are below estimated amounts, revise as appropriate, the County’s ADU strategies to help achieve overall goal of at least 280 ADUs during the planning period.</li> </ul>
Primary Responsible Departments	Housing; Planning; Building; Environmental Health Services; Public Works
Funding Sources	General Fund; CalHome; Marin County Collaborative REAP
Relevant Housing Policies	1.3, 1.4, 2.4, and 3.4

**Program 5: SB 9 Mapping Tool**

SB 9 (Government Code Section 65852.21) is a new regulation that allows property owners to build additional units on their properties. In the unincorporated County, properties eligible to utilize SB 9 are limited to those in urbanized areas and in urban clusters, in addition to other exclusions included in the statute. The County will facilitate the SB 9 process by developing a mapping tool to help property owners determine if their properties may be eligible to utilize SB 9 to add new units onsite.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2024, develop and implement an online mapping tool that will identify areas in the unincorporated area that are eligible to use SB 9.</li> </ul>
Primary Responsible	Housing; Planning; Public Works

Departments	
Funding Sources	Marin County Collaborative REAP Funds
Relevant Housing Policies	1.1, 3.1, 3.2, and 3.3

**Program 6: Efficient Use of Multi-Unit Land**

The County permits single-unit homes in all residential zones and nonresidential zones that permit housing, potentially reducing the achievable density in multi-unit development. Establishing minimum densities will ensure efficient use of the County’s multi-unit land and prohibit the construction of new detached single-unit homes on multi-unit zoned property. Existing single-unit homes on multi-unit zoned property can remain and limited expansion or improvement, or reconstruction to replace units damaged due to accidents or disasters would be permitted.

To facilitate efficient use of land, some jurisdictions have also established target densities (tied to the calculation of RHNA potential, for example) to ensure no net loss of capacity as development occurs.

Also, currently no conventional zones in the County permit multi-unit housing, and only ten percent of the parcels are zoned to permit multi-unit residential use. This limited land available solely for multi-unit use is a potential constraint to housing development.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2023, amend the Development Code to:               <ul style="list-style-type: none"> <li>○ Establish minimum densities for multi-unit and mixed-use zones.</li> </ul> </li> <li>▪ By December 2023:               <ul style="list-style-type: none"> <li>○ Explore and, if appropriate, develop target density for each zone.</li> <li>○ Create a residential combining district that allows for form-based objective development standards rather than discretionary review.</li> </ul> </li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund

Relevant Housing Policies	1.1, 2.4, and 2.5
---------------------------	-------------------

**Program 7: Religious and Institutional Facility Housing Overlay**

Government Code Section 65913.6 allows a religious institution to develop an affordable housing project at a place of worship owned by the religious institution even if the development requires the religious institution to reduce the number of religious-use parking spaces available. This bill applies only to religious facilities located in zones that allow residential uses.

The County will establish a Religious and Institutional Facility Housing Overlay with the following potential provisions:

- Expanding the provisions of Section 65913.6 to other institutional uses, such as schools and hospitals, as well as religious facilities located in zones that currently do not allow residential uses.
- Allowing religious and institutional uses to construct up to four ADUs and JADUs onsite.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Beginning in 2023, conduct outreach to religious and institutional facilities regarding the Overlay opportunity.</li> <li>▪ By December 2024, establish a Religious and Institutional Facility Housing Overlay to extend the provisions of Section 65913.6 to other institutional and religious uses.</li> </ul>
Primary Responsible Departments	Planning, Housing
Funding Sources	General Fund
Relevant Housing Policies	1.3 and 2.4

**Program 8: Development Code Amendments**

The County will amend the Development Code to address the following to facilitate development of a variety of housing types:

- **Residential Use in Mixed-Use Development:** - The County allows residential uses on the upper floors and residential units are limited between 25 and 29 percent of the floor area. Amend the Development Code to allow at least 50



percent of the floor area as residential use.

- **Height Limit:** The 30-foot height limit is potentially constraining to achieving a density of 30 units per acre. Amend the Development Code to increase the height limit to 45 feet.
- **Accessory Dwelling Units:** Currently, the County’s ordinance does not allow an ADU to be sold or otherwise conveyed separately from the primary dwelling unit. However, State law makes an exception if the property is owned by a nonprofit organization. The County will amend the ADU regulations to be consistent with State law.
- **Agricultural Worker and Employee Housing:** The County’s provisions for agricultural worker housing is not consistent with the State Employee Housing Act. Furthermore, the Development Code does not contain provisions for employee housing. Pursuant to the Employee Housing Act, any housing for six or fewer employees (in any industry) should be permitted as single-unit residential use. The County will amend agricultural worker provisions in the Development Code to be consistent with State law.
- **Residential Care Facilities:** The County permits residential care facilities for six or fewer persons in all residential zones. For residential care facilities for seven or more persons, a conditional use permit is required. The County will revise the Development Code to permit or conditionally permit large residential care facilities in all zones that permit residential uses, as similar uses in the same zone, and to ensure the required conditions for large facilities are objective and provide certainty in outcomes.
- **Supportive Housing:** Pursuant to State law (Government Code Section 65650 et seq.), supportive housing developments of 50 units or fewer that meet certain requirements must be permitted by right in zones where mixed-use and multi-unit development is permitted. Additionally, parking requirements are prohibited for supportive housing developments within one half mile of a transit stop. The County will amend Title 24 of the Municipal Code to address the parking requirements to comply with State law (see Program 9).
- **Emergency Shelters:** Government Code Section 65583 requires that parking standards for emergency shelters be established based on the number of employees only and that the separation requirement between two shelters be a maximum of 300 feet. The County Development Code will be revised to comply with this provision.
- **Low Barrier Navigation Center (LBNC):** Government Code section 65660 et seq. requires that LBNCs be permitted by right in mixed-use and nonresidential zones that permit multi-unit housing. The Development Code will be amended

to include provisions for LBNC.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, amend the Development Code as outlined above to facilitate a variety of housing types, especially for special needs populations.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 2.1, 2.3, and 2.4

### Program 9: Parking Standards

The County’s current parking standards are codified in Title 24 of the Municipal Code. The parking standards will be updated to address the following:

- Parking for Multi-Unit Housing:** The County current standards are slightly higher than the standards established for the State density bonus program. The County will reduce the parking requirements to match the State density bonus requirements.
- Supportive Housing:** Pursuant to State law (Government Code Section 65650 et seq.), parking requirements are prohibited for supportive housing developments of 50 units or fewer meeting certain requirements and located within one-half mile of a transit stop.
- Emergency Shelters:** Government Code Section 65583 requires that parking standards for emergency shelters be established based on the number of employees only, not based on shelter capacity (such as number of beds).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, amend Title 24 of the Municipal Code to reduce parking requirements for multi-unit housing, and to revise parking requirements for supportive housing meeting certain criteria and emergency shelters.</li> </ul>
Primary Responsible Departments	Public Works
Funding Sources	General Fund

Relevant Housing Policies	1.1 and 2.1
---------------------------	-------------

**Program 10: Objective Development Standards for Off-Site Improvements**

Development projects in the County are required to make on- and off-site improvements. The Objective Design Standards that the County has been working on impact only on-site improvements and cover a property up to the right of way. Many rural communities in the unincorporated areas do not have standardized requirements for off-site improvements (such as streetscape improvements), which can make development uncertain and add costs.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2025, establish objective development standards for off-site improvements.</li> </ul>
Primary Responsible Departments	Housing; Planning; Public Works
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 1.5

**Program 11: Water Availability**

Availability of water is a significant constraint to housing development in the County and beyond. The County will pursue several strategies to mitigate this constraint to the extent feasible.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Continue to promote sustainability strategies (such as water conservation and recycling).</li> <li>Beginning in 2023, collaborate with water service providers to conduct a strategic water supply assessment in 2023 to evaluate increased supply within Marin (e.g., increased reservoir capacity, new reservoir(s), increase use of recycled water, desalinization plant) and external to Marin (e.g., EBMUD, Russian River water).</li> <li>Upon adoption of the Housing Element, submit it to all water districts and notify all water districts of the requirement to prioritize water allocation for new</li> </ul>
-------------------------------	---

	affordable housing development (Government Code Section 65589.7).
Primary Responsible Departments	Housing
Funding Sources	General Fund, State infrastructure funds
Relevant Housing Policies	1.5

**Program 12: Septic for Multi-Unit Housing**

Parts of the County have no sewer services, with properties relying on individual onsite septic systems. The County will pursue strategies to address this constraint to multi-unit development.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2022, develop standards for multi-unit development in septic areas.</li> <li>▪ In 2023 initiate a study to identify alternative approaches to sewage disposal (e.g., package plants, community systems, incinerator toilets, etc.). Upon completion of the study, update by 2024 the County’s methodology for calculating septic capacity.</li> </ul>
Primary Responsible Departments	Housing; Environmental Health Services
Funding Sources	General Fund
Relevant Housing Policies	1.5

**Special Needs Housing**

**Program 13: Reasonable Accommodation**

Reasonable Accommodation provides flexibility in the implementation of land use and development regulations in order to address the special housing needs of persons with disabilities. The review and approval process of Reasonable Accommodation

requests may delay a person’s ability to access adequate housing. The County will expedite Reasonable Accommodation requests. (See also Program 21: Rehabilitation Assistance for funding available to assist lower income households in making accessibility improvements.)

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Beginning in 2023, offer expedited review and approval of Reasonable Accommodation requests.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

#### **Program 14: Universal Design and Visitability**

Universal design is the design of buildings or environments to make them accessible to all people, regardless of age, disability, or other factors. Universal design goes beyond ADA requirements but may add to the cost of construction. Typically, local governments incentivize the use of universal design principles.

Currently, visitability is a requirement for HUD-funded single-unit or owned-occupied housing. Visitability refers to housing designed in such a way that it can be lived in or visited by people who have trouble with steps or who use wheelchairs or walkers. The County may consider expanding the visitability requirement to multi-unit housing.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2024, study policies and/or incentives to encourage requirements for universal design and visitability, and develop them by 2025 for implementation.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

### Program 15: Housing for Farmworkers and Hospitality Workers

Agricultural operations represent an important component of the County’s economic base. Most farming operations are small dairies, individually employing a small number of farmworkers. These farms often do not have the ability to provide housing for all their workers. Year-round fishery operations also employ a significant number of workers collectively. In addition, Marin County is a popular tourist destination. Farmworkers, fishery workers, and hospitality employees typically earn lower incomes and have limited affordable housing options. The County will explore policies that facilitate the provision of affordable housing for these workers. Potential considerations include:

- Setting aside a specific percentage of affordable housing units for farmworkers within larger affordable housing developments.
- Partnering with other jurisdictions, farm operators, hotels, and other hospitality employers in the region to contribute to an affordable housing fund or a community land trust. Funding collected can be used to acquire, develop, and/or rehabilitate housing for farmworkers.
- Requiring hospitality employers to provide housing to temporary employees during peak seasons.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2025, develop strategies for addressing farmworker and hospitality worker housing, with the goal of increasing housing for these employees by 20 percent.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 2.3

### Program 16: Project Homekey

The County is actively pursuing Project Homekey opportunities in order to provide permanent supportive housing for people experiencing homelessness. Homekey is an opportunity for the County to pursue funding for the development of a broad range of housing types, including but not limited to hotels, motels, hostels, single-family homes, multi-unit apartments, adult residential facilities, and manufactured housing, and to convert commercial properties and other existing buildings to permanent or interim

housing for the homeless.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, identify locations that may be appropriate as Project Homekey sites and conduct outreach to interested nonprofit developers to pursue funding from HCD.</li> <li>▪ Develop 20 units using Project Homekey over eight years.</li> </ul>
Primary Responsible Departments	Housing; Health and Human Services
Funding Sources	HCD Project Homekey Funds
Relevant Housing Policies	2.1, 2.2, and 4.3

### Program 17: Housing for Seniors

The County has a high proportion of aging residents. Many have expressed the need for additional senior housing options, specifically allowing seniors to trade their current homes for other housing that requires less maintenance, is designed to accommodate the mobility needs of seniors, and is more affordable. The County will pursue a variety of housing options for seniors.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, explore expansion of home match services to help match over-housed seniors with potential lower income tenants.</li> <li>▪ In 2024, develop incentives and development standards to facilitate various senior housing options (such as senior apartments/homes, co-housing, assisted living, etc.).</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

## Preservation of Housing

### Program 18: Short-Term Rentals

The County may explore options for limiting short-term rentals in order to preserve housing units for permanent residential use. Strategies may include:

- Prohibiting short-term rentals (no less than 30 days allowed)
- Limiting the number of days the unit can be used for short-term rentals
- Prohibiting short-term rentals in all multi-unit dwellings
- Allowing for short-term rentals if the property is the owner’s primary residence
- Benchmarking the number of short-term rentals allowed to no more than a specific percentage of the community’s rental housing stock

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, evaluate and adopt strategies for regulating short-term rentals.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	2.6 and 3.3

### Program 19: Vacant Home Tax

The vacancy rate in the unincorporated County is about 10 percent with close to 60 percent of vacant units used for recreational, seasonal, and occasional purposes. A vacant home tax is an emerging strategy for discouraging leaving homes unoccupied for extended periods of time.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2024, study the appropriateness of a vacant home tax as a strategy to discourage unoccupied housing units and increase revenue for affordable housing. If appropriate, pursue ballot measures in 2025 to establish tax.</li> </ul>
Primary Responsible Departments	Housing



Funding Sources	General Fund
Relevant Housing Policies	2.6

### Program 20: Monitoring of Rental Housing

The Marin County Landlord Registry was established in 2019 and requires landlords to report rents and general occupancy information for all rental properties subject to the Just Cause for Eviction ordinance. While the registry is designed to collect data on the rental market, the data provides an incomplete picture since a large portion of rental units are exempt from the Just Cause for Eviction ordinance.

Also, the County Development Code prohibits conversion of multi-unit rental units into condominiums unless the vacancy rate exceeds five percent and the change does not reduce the ratio of multi-unit rental units to less than 25 percent of the total number of dwelling units in the County.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to implement the Landlord Registry and Condominium Conversion ordinance.</li> <li>▪ In 2024, expand Landlord Registry requirements to cover all rental units in the unincorporated County.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	3.3 and 4.1

### Program 21: Rehabilitation Assistance

The County supports the housing rehabilitation needs of lower income households through:

- Residential Rehabilitation Loan Program: provides low-interest property improvement loans and technical assistance to qualified, very low income homeowners to make basic repairs and improvements, accessibility improvements, correct substandard conditions, and eliminate health and safety hazards.

- Funding assistance to Marin Center for Independent Living (MCIL) home modification program to increase independence and accessibility for renters and homeowners.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Provide rehabilitation loans to 10 households annually (80 households over eight years).</li> <li>▪ Provide support for 6 households to make accessibility improvements annually (48 households over eight years).</li> <li>▪ Continue to support nonprofit organizations in providing rehabilitation assistance to lower income renters and homeowners.</li> </ul>
Primary Responsible Departments	Housing and Federal Grants
Funding Sources	CDBG
Relevant Housing Policies	2.1, 2.5, 2.6, and 3.4

**Program 22: Habitability**

The County Department of Environmental Health’s Housing Services conducts inspections on residential structures of three or more units only. Single-unit homes and duplexes are not covered by inspection services.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2025, expand the inspection services to cover the entire housing stock.</li> </ul>
Primary Responsible Departments	Environmental Health Services
Funding Sources	General Fund
Relevant Housing Policies	2.5 and 2.6

**Program 23: Preservation of At-Risk Housing**

The County has an inventory of publicly assisted housing projects that offer affordable housing opportunities for lower income households. Most of these projects are deed restricted for affordable housing use long-term. However, 61 units are considered at high and very high risk of converting to market-rate housing. The County will work to preserve these at-risk units.

<p>Specific Actions and Timeline</p>	<ul style="list-style-type: none"> <li>▪ Annually monitor status of at-risk projects with the goal of preserving 100% of at-risk units.</li> <li>▪ Ensure tenants are properly noticed by the property owners should a Notice of Intent to opt out of low income use is filed. Notices must be filed three years, one year, and six months in advance of conversion.</li> <li>▪ In the event of a potential conversion, conduct outreach to other nonprofit housing providers to acquire projects opting out of low income use.</li> <li>▪ Consider a Community Opportunity to Purchase Act (COPA) program (see also Program 30: Tenant Protection Strategies).</li> </ul>
<p>Primary Responsible Departments</p>	<p>Housing</p>
<p>Funding Sources</p>	<p>Housing Trust Fund</p>
<p>Relevant Housing Policies</p>	<p>2.5, 2.6, 3.3, and 3.4</p>

**Housing Affordability**

**Program 24: Inclusionary Housing**

The County implements an Inclusionary Housing program requiring a 20 percent set aside of new units or lots in a development for affordable housing. Ownership developments must have inclusionary units affordable for low to moderate income households. Rental developments must provide inclusionary units for very low to moderate income households. For both rental and homeownership developments, the larger the project, the deeper the affordability requirements. All inclusionary units must be income-restricted in perpetuity. To enhance housing development feasibility

while complying with the inclusionary requirements, the County plans to:

- Modify the inclusionary housing program to expand affordability ranges based on the type and size of projects and to be in compliance with AB 1505.
- Work with Marin County cities and towns to achieve consistency across jurisdictions and to ensure that the policies are aligned with best practices and reflect current market conditions.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By 2023, modify the Inclusionary Housing program to expand affordability ranges and to comply with State law.</li> <li>▪ In 2023, coordinate with other County jurisdictions to align inclusionary housing requirements for consistency.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 1.4, and 2.4

**Program 25: Incentives for Affordable Housing**

The County will continue to facilitate the development of affordable housing, especially for lower income households (including extremely low income) and those with special housing needs (including persons with disabilities/developmental disabilities, older adults, farmworkers, and people experiencing homelessness).

Incentives available for affordable housing projects include:

- County density bonus of 10 percent (above State density bonus)
- Potential fee waivers
- Priority processing
- Technical assistance
- Financial participation by the County, subject to funding availability
- Support and assistance in project developer’s applications for other local, State, and federal funds

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to offer incentives to facilitate affordable housing.</li> <li>▪ Annually conduct outreach to affordable housing</li> </ul>
-------------------------------	---

	<p>developers to evaluate the effectiveness of incentives and make appropriate adjustments.</p> <ul style="list-style-type: none"> <li>Facilitate the development of 200 affordable units over eight years.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund; Housing Trust Fund
Relevant Housing Policies	2.4

### Program 26: Below Market Rate (BMR) Homeownership Program

Funded with Successor Agency funds, the BMR Homeownership program offers low and moderate income, first-time homebuyers the opportunity to purchase specified condominium units in Marin County at less than market value. As the owner of a BMR unit sells, the unit is resold to another income-eligible homeowner.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Maintain 90 BMR units for continued affordable housing for lower and moderate income households.</li> </ul>
Primary Responsible Departments	Marin Housing Authority
Funding Sources	Successor Agency to the Marin County Redevelopment Agency
Relevant Housing Policies	2.1, 2.4, and 3.4

### Program 27: Community Land Trust

Currently, the County has two Community Land Trusts in the unincorporated areas - Community Land Trust Association of West Marin (CLAM) and Bolinas Community Land Trust (BCLT). CLAM provides education, assistance with project management, and screening and referral services to prospective landlords who agree to rent their units at rates affordable to low and moderate income households. The County provides financial, administrative, and technical support to CLAM. The County may

facilitate the establishment of additional Community Land Trusts in different CPAs.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue supporting the operation of CLTs.</li> <li>▪ Subject to funding availability, establish additional CLTs in other CPAs.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	3.4, 4.1, and 4.2

**Program 28: Affordable Housing Funding Sources**

The County’s Affordable Housing Fund is funded with a variety of sources:

- Affordable Housing Impact Fee
- Inclusionary Housing In-Lieu fee
- Rental Housing Impact Fee
- Jobs/Housing Linkage Fee
- CDBG
- HOME
- Permanent Local Housing Allocation
- General Fund

In addition, the County continues to pursue additional funding from State and Federal housing programs. Other potential sources may include vacant home tax (see Program 19).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Annually pursue additional funding from State and Federal housing programs.</li> <li>▪ Facilitate the development of 200 affordable housing units.</li> </ul>
Primary Responsible Departments	Housing

Funding Sources	
Relevant Housing Policies	3.4

**Program 29: Community Plans**

Existing community plans contain goals, policies, and programs that are inconsistent with the Countywide Plan. Where such conflicts exist, the Countywide Plan prevails. The County will pursue neighborhood improvement strategies through community plans - specifically for Marin City, which already has a high concentration of affordable housing.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2023, initiate Marin City Community Plan, with the goal of adopting the plan by 2025.</li> </ul>
Primary Responsible Departments	Housing; Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 4.3

**Affirmatively Furthering Fair Housing**

**Program 30: Fair Housing Outreach and Enforcement**

The County refers fair housing complaints to Fair Housing Advocates of Northern California (FHANC) for legal services. The County will assist in fair housing outreach and education, and reasonable accommodations through funding FHANC.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Assist an average of 50 residents annually with tenant/landlord dispute resolution, and fair housing inquiries and investigations.</li> <li>Annually update, or more frequently as needed, the County’s Landlord and Tenant Resources webpage.</li> <li>Beginning in 2023, increase fair housing outreach to Homeowners Associations, realtors, property managers, and brokers, as well as individual property owners (such</li> </ul>
-------------------------------	---

	as single-unit homes, duplex/triplex units, and ADUs used as rentals). Specifically, promote the State’s Source of Income Protection bills (SB 329 and SB 222) that prohibit discrimination based on the use of public assistance for housing payments (such as Housing Choice Vouchers).
Primary Responsible Departments	Fair Housing Advocates of Norther California; Housing Authority; Housing
Funding Sources	CDBG; General Fund
Relevant Housing Policies	4.1, 4.2, and 4.3

**Program 31: Tenant Protection Strategies**

Throughout the region, tenants are facing rising rents and increasing risk of eviction due to the economic impact of COVID, as well as displacement from the economic pressure of new development. The County will explore a variety of strategies that offer tenant protection. These may include:

- **Rent stabilization:** Currently, the State imposes rent caps on some residential rental properties (AB 1482) through 2030. However, AB 1482 exempts single-unit homes and condominiums for rent and multi-unit housing units built within the previous 15 years. A strategy for rent stabilization is to adopt a permanent policy and/or expansion to units not covered by AB 1482. However, compliance with the 1995 Multi-unit Housing Act (Costa Hawkins) is critical.
- **Just cause for eviction:** AB 1482 also establishes a specific set of reasons that a tenancy can be terminated. These include: 1) default in rent payment; 2) breach of lease term; 3) nuisance activity or waste; 4) criminal activity; 5) subletting without permission; 6) refusal to provide access; 7) failure to vacate; 8) refusal to sign lease; and 9) unlawful purpose.

The County passed an ordinance to require a just cause for eviction that applies to properties of three or more dwelling units in January 2019, before the adoption of AB 1482. The County may consider expanding “just cause” to all units, and potentially include relocation assistance.

- **Local relocation assistance:** The County can adopt a local relocation assistance provision that provides greater relocation assistance to special needs groups (e.g., seniors, disabled, female-headed households) and reasonable accommodation for persons with disabilities.



- **Tenant commission:** Typically, most land use policies and planning decisions are made from the perspective of property owners. Tenants lack a voice in the planning process. A tenant commission or advisory committee may be an avenue through which they can bring policy discussions that highlight tenant interests to the County. While the proportion of renter-occupied units in the County is growing, there is currently no body within the County where their unique concerns can be raised.
- **Right to Purchase:** When tenants are being evicted due to condominium conversion or redevelopment, offer first right to purchase to displaced tenants to purchase the units.
- **Right to Return:** When tenants are being evicted due to rehabilitation/renovation of the property, offer first right to displaced tenants to return to the improved property.
- **Tenant Bill of Rights:** Adopt a tenant’s bill of rights that considers extending protections for subletters and family members, and addresses severe habitability issues and market pressures. This provision would also provide anti-retaliation protection for tenants that assert their rights.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to implement the County’s Landlord Registry requirement.</li> <li>▪ In 2023, begin community outreach to discuss various tenant protection strategies.</li> <li>▪ In 2024, adopt appropriate tenant protection strategies.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	4.1

**Program 32: Comprehensive Review of Zoning and Planning Policies**

The County’s Development Code and planning policies have been incrementally developed over time and may have inherited language rooted in segregation. The County will conduct a comprehensive review of its zoning and planning policies to remove discriminatory language or policies that may directly or indirectly perpetuate segregation. This includes reviewing the use of the terms “single-unit” residential use,

“protecting the character of the neighborhood,” and findings of conditional approval in different regulatory documents.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2025, conduct a comprehensive review of zoning and planning policies to remove discriminatory language and policies.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 4.3

**Program 33: Community Engagement**

Community Development Agency (CDA) outreach working group work with local communities to obtain input on housing and community development issues, especially to highlight areas that have historically been underserved or underrepresented in these conversations.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, develop a work plan and present to the BOS to identify new geographic areas/populations for outreach and establish a protocol for conducting outreach, with coordinated efforts with County CDA.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	3.1, 3.2, 4.2, and 4.3

## What Are the Desired Outcomes?

### GOAL EHS- I: Equitable Community Safety Planning

Equitable Community Safety Planning. Create equitable processes for executing climate resilience and community safety policies, where justice is central to policy design and implementation.

#### Policies

**EHS-1.1** Safety Planning for Everyone. Prioritize involvement of the vulnerable communities identified in the Marin County Climate Change Vulnerability Assessment in community safety planning. Reduce the exposure to, increase preparedness for, and reduce recovery times from natural and human-caused safety risks for vulnerable communities as well as all populations and communities in Marin County.

**EHS-1.2** Community-Led Safety Programs. Put community organizations and civic leaders at the forefront of the community safety planning process.

#### *Why is this important?*

**Environment:** Equity and environmental protection go hand-in-hand. Making environments healthier for people often involves preserving and restoring native habitat and ecosystem elements.

**Economy:** Community-led safety planning can reach a greater number of residents and help small business owners prepare for and recover quickly after disasters, creating resilient local economies.

**Equity:** Structuring community safety programs around a social equity and environmental justice framework ensures the most vulnerable communities in Marin are leaders in their own disaster planning and recovery.

#### *How will results be achieved?*

### Implementing Programs

**EHS-1.1.a** Develop a Vulnerable Communities Database. Using the County Climate Change Vulnerability Assessment as a starting point, develop a database of the County's vulnerable communities including their economic, gender, age, linguistic, ethnic, and racial characteristics; geographic locations; hazard impact; and adaptive capacity. The vulnerable communities database should include a mapping component. Reference the database when planning and developing resiliency outreach materials, financial assistance programs, and long-range planning initiatives. Update the database periodically and share with emergency response providers.

**EHS-1.1.b** Develop an Outreach Program for Vulnerable Populations. Develop a climate change preparedness outreach program focused on vulnerable populations that provides information on staying healthy and safe before, during, and after hazardous events. Programming can include educational events, workshops for

school aged children, and providing emergency kits to community members. To ensure success, the County should do the following: (1) account for all of the different factors that can deter people from being included in planning processes, and use approaches appropriate for each community; (2) partner with local community organizations to reach all populations and reduce health inequities; (3) provide materials in multiple languages; (4) provide staff fluent or proficient in the communities' predominant language(s); (5) address lack of access to technology that may prevent or delay emergency notifications; (6) make community engagement and participation easy and available to all residents through multiple media, such as social media, virtual meeting platforms, and in-person events; and (7) make public notices and other important document available in print at local libraries, community centers, or other gathering places. (See also EH-2.1.b)

**EHS-1.1.c** **Prevent Displacement of Vulnerable People.** Work with community-based organizations to develop and support temporary housing solutions for lower-income immigrants, older adults, and other vulnerable groups during and after an emergency. Provide priority access to housing developed for community residents and those who have been displaced following disasters.

**EHS-1.1.d** **Provide Financial Assistance.** Establish and fund an ongoing disaster preparedness and recovery financial aid program to ease the financial burden of response and recovery on vulnerable communities. Explore regional, state, and federal funding mechanisms to support the financial aid program.

**EHS-1.1.e** **Assist with Physical Evacuation.** Improve notification and tracking systems to ensure all known individuals who have difficulty physically evacuating are accounted for during and following disasters.

**EHS-1.2.a** **Partner with Local Leaders.** Identify, initiate, and formalize partnerships with community organizations and leaders in vulnerable communities to ensure that local residents can make significant contributions to planning processes. Build relationships with community-based organizations to improve trust and communication between local agencies and vulnerable communities, which may experience distrust of government authorities.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>1</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-20: Goal EHS-1. Equitable Community Safety Planning, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-1.1.a Develop a Vulnerable Communities Database	CDA	Existing Budget	High	Short-term
EHS-1.1.b Develop an Outreach Program for Vulnerable Populations.	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing
EHS-1.1.c Prevent Displacement of Vulnerable People	County partnerships	Existing Budget & Grants	High	Ongoing
EHS-1.1.d Provide Financial Assistance	County Partnerships	Grants	Medium	Ongoing
EHS-1.1.e Assist with Physical Evacuation	OES, Fire Agencies	Existing Budget & Grants	Medium	Ongoing
EHS-1.2.a Partner with Local Leaders	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing

---

<sup>1</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

## ~~Goal EHS-1: Hazard Awareness~~

### What Are the Desired Outcomes?

## **GOAL EHS-2: Disaster Preparedness, Response, and Recovery**

[Note to Reader: This Goal incorporates Goal 1: Hazard Awareness from the existing CWP Section 2.6 Environmental Hazards. New hazard awareness policies and language are shown in underline while the existing Hazard Awareness policies in the CWP moved here are not.]

Disaster Preparedness, Response, and Recovery. Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures. Ensure readiness in and after emergency situations and create an effective evacuation route network.

### **Policies**

- EHS 2.1**      Enhance Public Awareness. Make hazard studies, data, maps, services, and related information more accessible to residents and include more robust and targeted outreach in vulnerable communities.
- EHS 2.2**      Improve Information Base. Support scientific studies and other technical planning efforts that increase and refine the body of knowledge regarding hazardous conditions in Marin County.
- EHS 2.3**      Disaster Readiness. Maintain a level of preparedness to respond to emergency situations that will save lives, protect property, and facilitate recovery with minimal disruption.
- EHS 2.4**      Effective Emergency Access and Evacuation. Ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster.
- EHS 2.5**      Adequate Services. Improve existing and increase future capacity of critical services and infrastructure.

### *Why is this important?*

**Environment:** Expanded knowledge about hazards can protect the local environment ~~and can improve~~ improving the way in which environmental resources are managed as climate change stressors exacerbate hazards and damage environmental resources and require a greater allocation of resources for conservation activities. Considering environmental ramifications in the disaster preparedness and evacuation planning process contributes to ecologically sound practices that are compliant with relevant environmental regulations.

**Economy:** Effective disaster preparedness and recovery planning helps institutions, communities, and local economies “bounce back” from disaster events. Clearly understanding hazard risks, projected impacts, and potential mitigating steps is necessary for community members to adapt their businesses, investments, and policy decisions.

**Equity:** Hazard events have disproportionate effects on vulnerable individuals and communities. Community members, especially those within a vulnerable population group, may be unaware of the climate-related effects that may be harmful to their community, or how to stay safe during hazardous events. Community and civic leaders should have leading roles in disaster preparedness and recovery planning and programs to ensure vulnerable populations are not left behind during or after disasters.

*How will results be achieved?*

## **Implementing Programs**

- EHS-2.1.a**     **Distribute Maps.** Prepare Update regularly and make available to the public maps depicting evacuation routes and areas prone to environmental hazards.
- EHS-2.1.b**     **Develop an Inclusive Public Outreach and Engagement Strategy.** Collaborate with local, regional, state, and federal partners to develop a community-wide outreach program to educate a diverse community on how to prepare and recover from climate change effects Sponsor and support education programs pertaining to emergency/disaster preparedness and response protocols and procedures. Work to fill gaps in local information to ensure information is useful and able to be implemented. Materials should be developed in multiple languages and in several formats to reach all residents. Distribute information about emergency preparedness to residents, community groups, schools, religious institutions, transient occupancy establishments, and business associations. Include instruction on ZoneHaven and evacuation zones in educational materials. (See also EH-1.1b)
- EHS-2.1.c**     **Promote Awareness of Risks to Historic Resources.** Educate community members about the climate risks to historic, cultural, and tribal cultural resources, and the need to safeguard these cultural resources in partnership with tribal nations and community-based organizations.
- EHS-2.2.a**     **Improve Hazard Information.** Continue to improve available hazard information and knowledge base. Track changing hazard risk and impacts and identify gaps in hazard information and mapping. Support scientific study of hazard potential in Marin, including by providing investigators with access to public land and facilitating access to other areas.
- EHS-2.2.b**     **Document Areas Experiencing Repeated Damage from Hazards** For all types of environmental and climate change hazards, consistently map and track areas experiencing repeated damage from hazard events as a basis of informing the public and for future planning efforts
- EHS 2.3.a**     **Update the Emergency Recovery Plan.** Update the County’s emergency recovery plan, which addresses the steps that will be taken when an emergency situation occurs and during the immediate aftermath. Incorporate a framework for short-term immediate assistance for residents who have lost housing and access to resources and long-term housing re-construction plans, re-construction of facilities

and infrastructure, including those essential for critical medical services and utility services, and aid-based reimbursement for eligible disaster-related costs. Identify federal, state, tribal, regional, and private sector programs and assistance to supplement local disaster response efforts. Integrate the MCM LHMP mitigation actions and EOP, where relevant, into the Emergency Recovery Plan.

**EHS-2.3.b** **Plan for Recovery Permitting.** Plan for a recovery permit center that will be established following a large-scale disaster. The plan or framework will identify which department and/or staff will lead the recovery permitting process, what types of permit applications would be streamlined, and anticipated staffing levels (including contracted services), funds, and time frames for review. Identify zones, overlays, and specific or community plan areas where rebuilding could be subject to restrictive or subjective requirements and identify preliminary strategies for evaluating applications.

**EHS-2.3.c** **Support Post-Disaster Housing Affordability.** Develop a community planning process to support rebuilding of affordable housing after a disaster, adopt policies to support the replacement of affordable housing units that have been damaged or demolished, and prioritize the deployment of interim housing in vulnerable communities. Work to develop several funding sources to support implementation of the process.

**EHS-2.3.d** **Support Community-Led Response and Neighborhood Preparedness.** Improve strategies to identify and include civic leaders and the public in the disaster recovery decision-making process and implementation of post-disaster recovery programs. Identify a county designee to collaborate with the community and assist in developing the community preparedness and response strategies. Support community and neighborhood efforts in developing localized emergency response and preparedness plans by providing guidance and hazard data.

**EHS-2.3.e** **Provide and Support Emergency Preparedness Training.** Support the activities of Local Disaster Councils and fire departments in offering community emergency response training courses. Provide and support on-going disaster preparedness and hazard awareness training to all County employees, other responding agencies, and Local Disaster Councils. Ensure training occurs regularly, such as every three years, and includes emergency response approaches to vulnerable populations that cannot respond to a disaster without assistance.

**EHS-2.3.f** **Encourage Road Improvements.** Reduce regulatory impediments to road construction, widening, and other improvements by amending relevant sections of Marin County Code Titles 22, 23, and 24 to eliminate discretionary permit requirements and replace them with ministerial review to ensure that both public and private roads comply with codified engineering standards.

**EHS-2.4.a** **Maintain and Improve Disaster and Emergency Response Notification System.** Continue to maintain and refine the existing Alert Marin system for disaster and



emergency response notifications. Work to identify and close gaps in the ability of all residents to receive disaster and emergency response notifications and information, such as those without telecommunication devices or internet access.

**EHS-2.4.b** **Adopt Proactive Preparedness.** Update disaster preparedness and response plans, regulations, and programs periodically to respond to new hazard data and changing hazard conditions.

**EHS-2.4.c** **Identify and Improve Deficient Evacuation Routes.** Implement findings of the Marin Wildfire Protection Authority Evacuation Ingress-Egress Risk Assessment. Use the visual risk assessment and risk factors to identify and prioritize existing deficient evacuation routes. Improve evacuation routes based on the prioritization ranking, but also in consideration of improvements required for a transportation network which is resilient to flooding and inundation from sea level rise.

**EHS-2.4.d** **Create New Evacuation Routes.** Identify and construct additional local evacuation routes in areas of high hazard concern or limited mobility.

**EHS-2.4.e** **Ensure Access to New Development.** Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.

**EHS-2.5.a** **Assess Critical Services Capacity.** Conduct an assessment of existing critical services for adequate capacity considering the projected scale of new development and climate change-induced increases in the severity of hazards. Use the service capacity assessment to create or update minimum standards for existing and future development to meet current and future anticipated demands for infrastructure (e.g., water, sewer, roads), privately provided services (e.g., telecommunications, gas, electricity), and County provided services (e.g., police, fire). Purchase permanent and/or portable generators for critical facilities, infrastructure, and services that lack adequate backup power.

**EHS-2.5.b** **Explore Creation of New Evacuation Centers.** Assess the potential for existing community facilities, including but not limited to libraries, churches/places of worship, schools, community and recreation centers, nonprofits, and local businesses, to serve as evacuation centers. Evacuation centers should be outfitted to provide material assistance, phone charging during a power outage, air conditioning during a heatwave, organize welfare checks on vulnerable neighbors, or deliver other services. Consider leveraging potential community resiliency hubs to provide evacuation center services and equipment when standalone evacuation centers are infeasible.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>2</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-21: Goal EHS-2. Disaster Preparedness, Response, & Recovery Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-2.1.a Distribute Maps	Fire Agencies, IST, OES, CDA	Existing Budget	Medium	Ongoing
EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing
EHS-2.1.c Promote Awareness of Risks to Historic Resources	CDA	Existing	Low	Med-Term
EHS-2.2.a Improve Hazard Information	CDA	Existing	Med	Ongoing
EHS-2.2.b Document Areas Experiencing Repeated Damage from Hazards	CDA, DPW, OES	Will require additional funding	Med	Ongoing
EHS-2.3.a Update the Emergency Recovery Plan	OES	Will require additional funding	High	Short-term
EHS-2.3.b Plan for Recovery Permitting	CDA, DPW	Existing and may require additional funding	Med	Med-term
EHS-2.3.c Support Post-Disaster Housing Affordability	CDA, OES, HHS	Will require additional funding	High	Med-Term
EHS-2.3.d Support Community-Led Response and Neighborhood Preparedness	Fire Agencies, OES	Existing	High	Ongoing
EHS 2.3.e Provide and Support Emergency Preparedness Training	OES	Existing	High	Ongoing
EHS-2.3.f Encourage Road Improvements	CDA, DPW	Existing	High	Short-Term

<sup>2</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).



<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
EHS-2.4.a Maintain and Improve Disaster and Emergency Response Notifications System(s)	OES, Utilities	Existing	High	Med-Term
EHS-2.4.b Identify and Improve Deficient Evacuation Routes	Fire Agencies, DPW	Requires additional funding	High	Long-Term
EHS-2.4.c Create New Evacuation Routes	Fire Agencies, DPW	Requires additional funding	High	Long-Term
EHS-2.4.d Ensure Access to New Development	CDA, DPW	Existing	High	Ongoing
EHS-2.5.a Assess Critical Services Capacity	OES, Fire Agencies	Existing and may require additional funding	Med	Long-Term
EHS-2.5.b Explore Creation of New Evacuation Centers	OES, Fire Agencies, DPW	Existing	Med	Med-Term

## What Are the Desired Outcomes?

### Goal EHS-23: Safety from Geologic and Seismic Hazards

[Note to Reader: This section largely remains the same from the current CWP with minor modifications. The Implementing Programs have been reorganized to correspond better to the organization of the Policies.]

**Safety from Seismic and Geologic Hazards.** ~~Protect people and property from risks associated with seismic activity and geologic conditions. Minimize the loss of life, injury, and property damage due to seismic and related geological hazards.~~

#### Policies

- EH-23.1** **Avoid Geologic Hazards Areas.** Require development to avoid or minimize potential geologic hazards from earthquakes and unstable ground conditions.
- EH-23.2** **Comply with the Alquist-Priolo Act.** Continue to implement and enforce the Alquist-Priolo Earthquake Fault Zoning Act.
- EH-23.3** **Ensure Seismic Safety of New and Existing Structures.** Design and construct all new buildings and substantial remodeling projects to be earthquake resistant. The minimum level of design necessary would be in accordance with seismic provisions and criteria contained in the most recent version of the State and County Codes. Construction would require effective oversight and enforcement to ensure adherence to the earthquake design criteria.
- EH-23.4** **Protect Coastal Areas from Tsunamis.** Refer to tsunami wave run-up and inundation maps when reviewing proposed development along coastal areas of Marin County.

#### *Why is this important?*

~~Lives can be saved and property protected when buildings are located safely.~~

**Environment:** Well-planned development protects the environment and minimizes impacts to natural systems when structures or facilities designed to protect against the anticipated hazard.

**Economy:** Careful planning in the placement and construction of buildings development can help ensure safety during a hazardous event and provide for a faster recovery. This lessens the severity and duration of the economic impact caused by a seismic event and/or unpredictable geologic conditions.

**Equity:** The future health and resiliency prosperity of the community depend on our ability to cope with a major hazardous event. Ensuring that all community members reside in buildings resistant to seismic and geologic hazards is of the utmost importance. ~~Earthquakes on the San Andreas and Hayward-Rodgers Creek fault systems could significantly affect Marin.~~

*How will results be achieved?*

**Implementing Programs**

- EHS-23.1.a** **Map Geologic Hazard Areas.** Update Geologic Hazard Area maps as updated information becomes available. These maps should be used to determine the need for geologic and geotechnical reports for proposed development or redevelopment.
- EHS-23.1.b** **Require Geotechnical Reports.** Continue to require any applicant for land division, master plan, development approval, grading, or new construction in a geologic hazard area to submit a geotechnical report prepared by a State-certified Engineering Geologist or a Registered Geotechnical Engineer that: evaluates soil, slope, and other geologic hazard conditions; commits to appropriate and comprehensive mitigation measures sufficient to reduce risks to acceptable levels, including post-construction site monitoring, if applicable; addresses the impact of the project on adjacent lands, and potential impacts of offsite conditions; and meets the requirements of other agency regulations with jurisdiction in the hazard area, such as BCDC requirements for the safety of fills consistent with the Bay Plan.
- EHS-23.2.a** **Prohibit Structures in Active Fault Traces.** Prohibit placement of specified types of structures intended for human occupancy within 50 feet of an active fault trace in compliance with the Alquist-Priolo Earthquake Fault Zoning Act.
- EHS-23.2.b** **Limit Building Sites in Alquist-Priolo Zones.** Prohibit new building sites in any Alquist-Priolo Earthquake Fault Zone, unless a geotechnical report prepared by a professional geologist establishes that the development will comply with all applicable State and County earthquake standards and regulations.
- EHS-23.3.a** **Avoid Known Landslides Areas.** Continue to prohibit development in landslide areas and on landslide-prone deposits on steep slopes, except where the required geotechnical report indicates that appropriate mitigation measures can stabilize the site for construction.
- EH-23.3.b** **Protect Development from Increased Geologic Hazards.** Plan for and protect development from increased risk of landslide, debris flows, post-fire debris flows, and subsidence resulting from climate change impacts by implementing Stability Report requirements and subsidence evaluation guidelines.
- ~~EHS-1e3.3.c~~** **Improve Soils Information.** Compile and make available drilling log data from geotechnical reports that helps define the hazard potential due to specific soil conditions, such as areas with expansive soils, artificial fill, or bay mud. **[Moved from Hazard Awareness, is an existing policy in CWP]**
- EHS-23.3.d** **Explore New Guidelines for Rising Groundwater Levels.** Based on sea level rise mapping, explore creating new guidelines requiring geotechnical evaluations for new development within areas subject to sea level rise, to assess and anticipate rising groundwater levels.

- EHS-23.3.e Identify Compressible Soil Potential.** Require that geotechnical reports for projects on land underlain by compressible materials (such as fill, bay mud, and marsh or slough areas) delineate locations where settlement will be greatest and subsidence may occur, and recommend site preparation and construction techniques necessary to reduce risk and public liability to an acceptable level.
- EHS-23.3.f Require Construction Observation and Certification.** Require any work or construction undertaken to correct slope instability or mitigate other geologic hazard conditions to be supervised and certified by a geotechnical engineer and/or an engineering geologist.
- EHS-23.3.g Reliability of Lifelines and Access (Evacuation) Routes.** In cooperation with utility system providers, emergency management agencies, and others, assist in the development of strategies to reduce adverse effects of geologic hazards, especially fault surface rupture and landslides to critical public lifelines, and access (i.e., evacuation) routes in an emergency.
- EHS-23.3.h Retrofit County Buildings and Critical Facilities.** Identify and remedy any County-owned structures and critical facilities in need of seismic retrofit or other geotechnical/structural improvement, including eliminating any potentially hazardous features, and/or relocating services if necessary.
- EHS-23.3.i Post-Earthquake Damage Assessment.** Undertake immediate damage assessment of essential service buildings and facilities and then other buildings as part of the emergency response planning in response to a damaging earthquake.
- EHS-23.4.a Address Tsunami Potential.** Review tsunami wave run-up and inundation maps, ~~when available,~~ along with other applicable information to be considered in coastal planning and development.
- EHS-23.4.b ~~Make~~ Keep Marin County Tsunami-Ready. ~~Become a~~ Continue to maintain Marin's status as a National Weather Service TsunamiReady community** in order to promote public awareness and community preparedness and facilitate quick recovery in the event of a tsunami.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>3</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-22: Goal EHS-3. Safety from Geologic and Seismic Hazards, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-3.1.a Map Geologic Hazard Areas	CDA	Existing	High	Ongoing
EHS-3.1.b Require Geotechnical Reports	CDA	Existing	High	Ongoing
EHS-3.2.a Prohibit Structures in Active Fault Traces	CDA	Existing	High	Ongoing
EHS-3.2.b Limit Building Sites in Alquist-Priolo Zones	CDA	Existing	High	Ongoing
EHS-3.3.a Avoid Known Landslides Areas	CDA	Existing	High	Ongoing
EHS-3.3.b Protect Development from Increased Geologic Hazards	CDA	Existing	Med	Long-Term
EHS-3.3.c Improve Soils Information	CDA, USGS <sup>4</sup>	Existing & may require additional grants and revenue	Med	Med-Term
EHS-3.3.d Explore New Guidelines for Rising Groundwater Levels	CDA, USGS	Existing & may require additional grants and revenue	Med	Med-Term
EHS-3.3.e Identify Compressible Soil Potential	CDA / USGS	Existing	Med	Long-Term
EHS-3.3.f Require Construction Observation and Certification	CDA	Existing	High	Ongoing
EHS-3.3.g Reliability of Lifelines and Access (Evacuation) Routes.	Fire Agencies & OES	Will require additional funding	High	Ongoing
EHS-3.3.h Retrofit County Buildings and Critical Facilities.	DPW	Will require additional funding	Med	Ongoing
EHS-3.3.i Post-Earthquake Damage Assessment	OES	Will require additional funding	Low	Long-Term

<sup>3</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<sup>4</sup> United States Geologic Survey (USGS)

EHS-3.4.a Address Tsunami Potential	CDA / CNRA <sup>5</sup> / USGS	Existing	Med	Long-Term
EHS-3.4.b Keep Marin County TsunamiReady	OES	Existing	Med	Ongoing

---

<sup>5</sup> California Natural Resources Agency (CNRA)





## What Are the Desired Outcomes?

### Goal EHS-34 Safety from Flooding and Inundation

**Safety from Flooding.** Protect people, and property from risks associated with flooding. (Also see the Public Facilities and Water Resources sections.) Minimize the loss of life, injury, and property damage due to flooding hazards.

#### Policies

- EHS-34.1**     **Follow a Regulatory Approach.** Utilize regulations instead of flood ~~control~~ infrastructure projects whenever possible to minimize losses in areas where flooding is inevitable.
- EHS-34.2**     **Retain Natural Conditions.** Ensure that flow capacity is maintained in stream channels and flood plains, and achieve flood ~~control~~ management using flood plain restoration and biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.
- EHS-34.3**     **Monitor Environmental Change.** Consider cumulative impacts to hydrological conditions, including alterations in drainage patterns and the potential for a rise in sea level, when processing development applications in watersheds with flooding or inundation potential.
- EHS-34.4**     **Consider Flooding from Dam Failure Inundation.** Consider flood inundation resulting from upstream dam failures when assessing flood hazards for environmental review and implementing associated programs within the County.
- EHS-4.5**     **Encourage Modifications or Relocation of Existing Development.** Support and encourage private property owners to either modify, elevate, reinforce, or relocate development in flood-prone areas to account for increased flood extents and depths.
- EHS-4.6**     **Protect Public Facilities.** Minimize potential damage to essential public facilities due to flooding.

#### *Why is this important?*

With increases in sea level due to global warming, flooding is predicted to increase in the future. Locating development in flood-prone areas can expose structures to damage and create risks for inhabitants in the immediate and surrounding areas.

**Environment:** ~~Prohibiting~~ Approving adaptive, environmentally sensitive development in the floodplain helps preserve valuable habitat, vital groundwater recharge capacity, and other natural systems. Using nature-based flood management solutions restores valuable habitat and protects communities at the same time.

**Economy:** Significant flooding with associated economic impacts has occurred in portions of Corte Madera, Larkspur, Greenbrae, Ross, San Anselmo, San Rafael, and Novato over the last 50 years.

Flooding has also occurred in Mill Valley, Fairfax, Stinson Beach, Inverness, and Muir Beach. Extensive property damage could be expected in inundated valleys, especially those downstream from major dam/reservoir complexes. Protecting property from future flooding risks contributes to economic stability.

**Equity:** Limiting development in floodplain and coastal areas contributes to the protection of residents and their property. Ensuring vulnerable communities receive financial assistance to strengthen homes and properties against flood damage is important in an equitable approach to flood risk reduction.

*How will results be achieved?*

### **Implementing Programs**

- EHS-34.1.a** **Regulate Development in Flood and Inundation Areas.** Continue to require all improvements in Bayfront, Floodplain, Tidelands, and Coastal High Hazard Zones to be designed to be more resistant to damage from flooding, tsunamis, seiches, and related water-borne debris, and to be located so that buildings and features such as docks, decking, floats, and vessels would be more resistant to damage.
- EHS-34.1.b** **Update Maps.** ~~Annually~~ Periodically review those areas covered by the Countywide Plan that are subject to flooding, identified by floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or Department of Water Resources, and update Figure 2-13 and other General Plan maps accordingly. Map the combined effects of the FEMA 100-year storm event with sea level rise projections. Periodically review and overlay County zoning maps to show flood, tsunami, and inundation hazard areas along the San Francisco Bay, San Pablo Bay, Tomales Bay, and the Pacific Ocean, the Bayfront Conservation Zone, and the Coastal Zone.
- EHS-34.1.c** **Revise Regulations.** Consider expanding the F-1 and F-2 Floodway Districts to include areas of the unincorporated county that lie within primary and secondary floodways, and/or establishing an ordinance that will ensure that land use activities in flood hazard areas will be allowed only in compliance with federal standards.
- EHS-34.1.d** ~~Maintain Flood Controls~~ **Maintain Flood Management Measures.** Continue to implement adopted flood ~~control~~ management programs within designated flood zones, including limitations on land use activities in flood hazard areas and through the funding for repair and maintenance of necessary flood ~~control~~ management structures in partnership with local flood zones.
- EHS-34.1.e** ~~Restrict Design~~ **Development in Flood Prone Areas to Avoid Minimize Inundation.** Continue to regulate development in Special Flood Hazard areas by applying the County's Floodplain Management Ordinance, Federal Emergency Management Agency regulations, and environmental review pursuant to the California Environmental Quality Act (CEQA). Rather than explicitly restrict development in tsunami and flood hazard areas, unless a site is repeatedly and

significantly affected by flooding, require through amendments to County codes, new development to be designed, elevated, sited, and/or strengthened against flood inundation. Flood adaptation measures should, at a minimum, be consistent with FEMA regulations to reduce flood risk to residential buildings. Where possible, use nature-based flood adaptation measures, such as widening natural flood plains, creating constructed dunes, protecting and expanding wetlands, and creating new and expanding existing urban green spaces.

**EHS-34.1.f** **Continue Compliance under the National Flood Insurance Program (NFIP).** Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:

- Enforce the flood damage prevention ordinance.
- Participate in floodplain identification and mapping updates.
- Provide public assistance/information on floodplain requirements and impacts.

**EHS-34.1.g** **Facilitate Community Coordination Around Shoreline Adaptation.** Develop a framework for incentivizing landowners to work together on shoreline protection projects and facilitating public communication and coordination around shoreline protection in a process that follows Safety Element policies and programs.

**EHS-34.2.a** **Retain Ponding Areas.** Maintain publicly controlled flood ponding areas in a natural state for flood ~~control~~ management, and continue to promote compatible uses in ponding areas, such as agriculture, open space, and recreation.

**EHS-34.3.a** **Require Hydrologic, Hydraulic, and Geomorphic Studies.** Continue to require submission of detailed hydrologic and ~~geologic~~ geomorphic studies for any proposed development that could increase sedimentation of a watercourse or alter natural drainage patterns. Amend the Development Code to include findings to continue to regulate development in flood prone areas to ensure public health and safety and to preserve the hydraulic and geomorphic integrity of the stream system and associated habitat.

**EHS-34.3.b** **Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas.** Consider the effects of upstream development, including impervious surfaces, alteration of drainage patterns, reduction of vegetation, increased sedimentation, and others, on the potential for flooding in low-lying areas. Consider watershed studies to gather detailed information.

**EHS-34.3.c** **Develop Watershed Management and Monitoring Plans.** ~~Develop watershed-specific, integrated watershed management and monitoring plans that include development guidelines, natural flood mitigation measures, biomechanical technologies, and the enhancement of hydrological and ecological processes. The~~

~~guiding principles of the watershed plans shall equally consider habitat and species protection and monitoring as well as the protection of human life and property.~~

**EHS-34.4.a** ~~**Maintain Update Current Dam Inundation Failure Maps.**~~ Update and make Maintain up-to-date public inundation maps for dam/reservoir complexes where downstream valleys are inhabited and the risk of loss of life and extensive property damage is significant. Coordinate with water districts to obtain the most current information from their dam safety programs and reports submitted to the State Division of Safety of Dams.

**EHS-34.4.b** ~~**Review and Inspect Small Dams.**~~ Maintain permit authority over and continue to oversee construction of dams too small to be regulated by the State or federal government.

**EHS-34.k** ~~**Anticipate Climate Change Impacts, Including Sea Level Rise.**~~ Recent predictions of sea level rise for the San Francisco Bay region by BCDC and USGS based on climate models and hydrodynamic modeling of the San Francisco Bay Estuary Institute indicate 16 inches of rise by mid-century and 55 inches by 2100. Recent guidance from the California Coastal Commission instructs local coastal resilience planners to use sea level rise targets based on the best available science and a minimum of 3.5 feet of SLR by 2050. Cooperate with the California Coastal Commission, U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission, the California Landscape Cooperative's Climate Commons project and other monitoring agencies to track bay and ocean levels and share baseline topographic and resource data obtained by the County in implementing its own projects to enhance hydrodynamic and ecosystem modeling efforts and assessment of regional climate change impacts. Use official estimates for mean sea level rise and topographic data for environmental review. Environmental review for development applications and County infrastructure shall incorporate official mid-century sea level rise estimates, California Coastal Commission mid-century sea level rise projections, and require adaptive strategies for end-of-century sea level rise for any such project with expected life times beyond 2050.

**EHS-34.l** ~~**Limit Seawall Barriers.**~~ Limit repair, replacement, or construction of coastal sea walls and erosion barriers consistent with Local Coastal Program requirements, and as demonstrated to be necessary to protect persons and properties from rising sea level.

**EHS-34.n** ~~**Plan for Climate Change Impacts, Including Sea Level Rise.**~~ Consider sea level rise in future countywide and community plan efforts. Apply for membership in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), and as appropriate through revisions to the Marin County Code, obtain reductions in flood insurance rates offered by the NFIP to community residents. Cooperate with FEMA in its efforts to comply with recent congressional mandates to incorporate predictions of sea level rise in its Flood Insurance Studies and FIRM. For development of watershed management plans and flood control

~~infrastructure consider official mid-century and end-of-century sea level rise estimates in hydraulic/hydrodynamic modeling, as well as climate adaptation strategies, including: avoidance/planned retreat, enhance levees, setback levees to accommodate habitat transition zones, buffer zones and beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood proofing structure, provision for additional floodwater pumping stations, and inland detention basin to reduce riverine peak discharges. Participate in the Bay Area Climate & Energy Resilience Project and its March 2013 Proposed 12 Month Action Plan, developed by the Bay Area Joint Policy Committee of the Association of Bay Area Governments. Revise the Marin County Hydrology manual to, at a minimum, incorporate use of updated rainfall frequency data from NOAA's Atlas 14 Volume 6, Vers. 2.1 California (rev. 2012).~~

**EHS-4.5.a** **Provide Flood Reduction Information Resources.** Provide private property owners with resources and recommendations for reinforcing development against flooding. Advocate for a hierarchy of flood adaptation measures beginning with the most preferred strategies, as follows: 1. nature-based solutions; 2. measures to accommodate flooding, such as reinforced or raised ground level floors; 3. a mix of soft (i.e., nature-based) and hard engineering strategies, 4. strictly hard engineering strategies (i.e., structural stabilization).

**EHS-4.5.b** **Participate in Incentive-Based Programs.** Continue participation in incentive-based programs such as the Community Rating System, which encourages community floodplain management practices that exceed NFIP minimum requirements, and StormReady, a voluntary NOAA National Weather Service program focusing on community communication and safety skills.

**EHS-34.5.c** **Alert Property Owners.** Notify owners of property in areas with inundation or flooding potential regarding those hazards when they seek development review or other related County services.

**EHS-34.6.a** ~~**Locate Critical Facilities Safely.** Amend the Development Code to prohibit placement of public safety structures within tsunami inundation or flood-prone areas.~~ **Protect and Ensure Continued Operation of Critical Public Facilities.** Locate new essential critical facilities, including hospitals and healthcare facilities, emergency shelters, fire stations, emergency command centers, emergency communications facilities, and utility infrastructure outside tsunami and flood hazard areas. If a critical public facility must be located in a tsunami and flood hazard area, ensure the facility is designed to withstand and remain operational under anticipated future flooding conditions. Where existing critical public facilities are at risk due to flooding, require on- and off-site flood risk adaptation measures to reduce potential losses. Flood risk adaptation measures may include but are not limited to raising electrical and gas systems, installing watertight doors, installing flood shields for windows and entrances, constructing flood barriers or floodwalls,

and raising the ground floor of the facility. Consider alternate, less hazard prone locations for lost structures and facilities.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>6</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-23: Goal EHS-4. Safety from Flooding, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-4.1.a Regulate Development in Flood and Inundation Areas	CDA, DPW, OES	Existing budget, Fees	High	Ongoing
EHS-4.1.b Update Maps	CDA, DPW	Existing budget	Med	Med-Term
EHS-4.1.c Revise Regulations	CDA, DPW	Existing & may require additional grants or revenue	Med	Med-Term
EHS-4.1.d Maintain Flood Management Measures	Flood Control Zones	Existing & may require additional grants or revenue	High	Ongoing
EHS-4.1.e Restrict Development in Flood Prone Areas to Minimize Inundation	CDA, DPW	Existing budget	High	Ongoing
EHS-4.1.f Continue Compliance under the National Flood Insurance Program (NFIP)	DPW	Existing budget	High	Ongoing
EHS-4.1.g Facilitate Community Coordination Around Shoreline Adaptation	CDA, DPW	Existing & may require additional grants or revenue	High	Med-Term
EHS-4.2.a Retain Ponding Areas	DPW	Will require	High	Ongoing

<sup>6</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		additional grants or revenue		
EHS-4.3.a Require Hydrologic, Hydraulic, and Geomorphic Studies	CDA, DPW	Existing budget	High	Ongoing
EHS-4.3.b Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas	CDA, DPW	Will require additional grants or revenue	Med	Long-Term
EHS-4.4.a Maintain Current Dam Failure Maps	CDA, OES	Existing budget	Med	Med-Term
EHS-4.4.b Review and Inspect Small Dams	CDA, DPW	Existing budget	Low	Ongoing
EHS-4.5.a Provide Flood Reduction Information Resources	CDA, DPW	Existing budget	Med	Ongoing
EHS-4.5.b Participate in Incentive-Based Programs	DPW, OES	Existing budget	Med	Ongoing
EHS-4.5.c Alert Property Owners	CDA	Existing budget & may require additional grants or revenue	High	Ongoing
EHS-4.6.a Protect and Ensure Continued Operation of Critical Public Facilities	DPW	Existing budget & may require additional grants or revenue	High	Short-Term





## What Are the Desired Outcomes?

### Goal EHS-5: Safety from Wildfire

Safety from ~~Fires~~ Wildfire. Protect people and property from hazards associated with wildland and structure fires.

#### Policies

- ~~EH-5.3-1~~ Adopt and Implement a **Regional Fire Management Plan with Marin Fire Agencies: the Marin Wildfire Prevention Authority, County Fire, and FireSAFE Marin**. Develop a collaborative, proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.
- ~~EH-5.2~~ **Ensure Adequate Fire Protection**. Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when modifications are made to existing development.
- ~~EH-5.53~~ **Regulate Land Uses to Protect from Wildland Fires**. Use land use regulations, including but not limited to subdivision approvals and denials and permits for remodeling existing structures, as means of protecting people and property from hazards associated with wildland fires.
- ~~EH-5.14~~ **Limit Risks to Structures**. Ensure that adequate fire ~~protection~~ protective features are in place in new development and when modifications are made to existing structures.
- ~~EH-5.25~~ **Remove Hazardous Vegetation**. Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires. (See also Natural Systems and Agriculture Element, BIO-1.4, Support Vegetation and Wildlife Disease Management Programs).
- ~~EH 4.4~~ **Ensure Adequate Emergency Response**. Ensure that there is an adequate number of trained and certified emergency medical technicians to address the increase in ~~medical demand~~.

#### *Why is this important?*

Fire plays a critical role in California's diverse ecology and protecting people and property from fires will be a continuing challenge.

**Environment:** Wildfires and especially those that involve structures produce vast amounts of greenhouse gases, and release toxic chemicals to the atmosphere, soils, and waterways. Record-breaking fires in recent years have altered California's landscape: destroying vegetation, displacing wildlife, destroying thousands of buildings, forcing hundreds of thousands of people to flee their homes, and exposing millions of residents to dangerously unhealthy air. Controlling wildfires will protect the environment from these harmful effects. Using measures such as controlled burning to



remove vegetation that has built up because of historic fire suppression efforts improves firefighting effectiveness and can help restore environmental balance in the county.

**Economy:** Wildfires have been expanding and are more destructive; reaching further into suburban and urban areas. In Northern California, wildfires have damaged thousands of homes, businesses, and utility infrastructure regionally in the past five years and burned thousands of acres of agricultural and open space lands reducing economic vitality and tax revenue generation of the affected communities and causing loss of tax revenue to the County. Fire costs can soar to millions of dollars a day from suppression costs, destruction of homes, loss of home-based businesses, damage to utilities, and impacts on recreation areas. Minimizing flammable vegetation can reduce potential economic impact and help speed recovery.

**Equity:** Safety from wildfire is especially important for vulnerable populations as the ability to cope with the impacts of evacuation and displacement, and subsequent building repairs or reconstruction is disproportionately low. Marin County has numerous structures located within the wildland-urban interface. Homes with wood siding, wood decks, and wood shingled roofs are at extreme risk from a wildland fire. Designing structures to be fire resistant protects all occupants as well as neighboring areas by limiting fuel available to a spreading fire.

*How will results be achieved?*

## **Implementing Programs**

**EHS-5.1.a** **Collaborate with Marin Fire Agencies on Implementing the Community Wildfire Protection Plan.** Continue to collaborate with Marin Wildfire Prevention Authority and local fire agencies on implementing the Marin Community Wildfire Protection Plan programs and encourage Marin cities and towns to also support its recommendations.

**EHS-4.1 5.1.b** **Continue FIRESafe Marin Program-Wildfire Education.** Continue the various education efforts and safety projects sponsored by FIRESafe Marin Marin Fire Agencies and implemented through each neighborhood. Education and outreach efforts should include all vulnerable populations, be specific to each community, and focus on community led safety programs. Encourage community participation in programs such as Firewise USA that can help neighbors get organized, find direction, and take action to increase preparedness and reduce ignition risk of homes and structures.

**EHS-4.a 5.1.c** **Provide Information About Fire Hazards.** Work with Marin Fire Agencies, FIRESafe Marin, the Marin County Fire Department, and other local, regional, and State agencies to make maps of areas subject to wildland fire hazard, publicly available, and to provide public information and provide publicly available and accessible educational programs regarding fire hazards, and techniques for reducing susceptibility to fire damage and identifying areas of low water pressure.

**EHS-5.1.d** **Identify Areas with Insufficient Evacuation Opportunities.** Continue to collaborate with Marin Fire Agencies in the identification and mapping of areas with only one

point of ingress or egress and roads that do not meet current emergency access and evacuation standards and the preparation of a program that prioritizes corrective actions.

**EHS-5.1.e** **Commit Funding for Evacuation Safety.** Commit funding for projects identified by the Marin Fire Agencies, and, in particular, the Marin Wildfire Prevention Authority that enhance evacuation safety, spanning road improvement, signage, and notification systems.

**EHS-5.1.f** **Monitoring State Requirements for Evacuation Routes.** Track development of minimum standards for roads and evacuation routes and seek to adopt the standard. Apply any state standards for evacuation routes to new development.

**EHS-4.m 5.1.g** **Continue to Use Technology to Promote Fire Safety.** Continue to apply computer technology, such as Geographic Information Systems, vegetation inventory, evacuation planning and air movement modeling programs, to identify, analyze, and plan for potential fire hazards, including mapping and data analysis for conformance with evolving State standards. Notify affected parties of any relevant findings and make the information available to the public.

**EHS-5.2.a** **Assess and Project Future Fire Protection Needs.** Conduct an assessment of current fire protection capabilities and project the future needs for fire protection, considering future changes in housing, vegetation, access, and water supply. Ensure all communities in unincorporated Marin have adequate fire protection, emergency vehicle access, and adequate water supply for peak fire flow requirements.

**EHS-5.2.b** **Consider Development Impacts to Fire Service.** Consider additional impact or mitigation fees, or a benefit assessment, to offset the impact of new development on fire services.

**EHS-5.2.c** **Describe Training Needs for Emergency Services.** Work with the Office of Emergency Services, Marin County Fire Department, Marin County Sheriff, and other organizations to identify and describe goals and standards for emergency service training.

**EHS-5.2.d** **Continue to Improve Street Addressing.** Continue to implement the program to improve and standardize the County street addressing system in order to reduce emergency service response times. Where applicable, coordinate the program with the cities.

**EHS-5.3.a** **Continue to Revise Adopted Standards.** Continue to adopt revisions to the International Fire and Building Codes, as amended by the State of California, and other standards which address fire safety adopted by the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.

**EHS-4.n 5.3.b** **Evaluate Regularly Update Development Standards.** Request Fire Department review of County requirements for peak-load water supply and roadways

(especially on hillsides) to determine whether those provisions need modification to meet evolving State standards, such as limiting narrow roads or one-way road use, grade/slope limits, minimum turning radius, and turnaround widths, to ensure adequate fire protection and suppression.

**EHS-5.3.c** **Require Rebuilding After a Disaster to Meet Current Standards.** Develop requirements for rebuilding after a disaster so redevelopment meets all current state and local building wildfire protection building code requirements relevant to the particular fire hazard severity zone of the project.

~~EH-4.b~~ **5.3.d** **Restrict Land Divisions.** Prohibit land divisions in very high and high fire hazard areas unless the availability of adequate and reliable water for fire suppression is ~~demonstrated and guaranteed provided~~; access for firefighting vehicles and equipment, as well as evacuation for residents, is provided from more than one point; necessary fire trails and fuel breaks are provided; structures are built consistent with the most current building code and fire code requirements for high fire hazard areas ~~fire-resistant materials are used exclusively in construction~~; and adequate clearances from structures and use of fire-resistant plants in any landscaping is required.

~~EHS-4.i~~ **5.3.e** **Conduct Life Safety Assessments.** Conduct a life safety assessment that considers the costs of fire safety maintenance prior to the County purchase of new land and facilities. Where feasible locate new essential public facilities outside of high fire risk areas, including hospitals and health care facilities, emergency shelters, emergency command centers and emergency communication facilities.

~~EHS-4.k~~ **5.4.a** **Amended Urban Wildlands Urban Interface (WUI) Regulations.** Work with Marin Fire Agencies ~~Marin fire departments~~ to prepare and adopt WUI regulations for new development and substantial remodels ~~in order to~~ reduce fire hazards in high and extreme fire hazard areas. Track and update standards as the areas of high and extreme fire hazards are re-defined.

~~EHS-4.d~~ **5.4.b** **Review Applications for Fire Safety.** Ensure new development meets all current building code and fire safety standards, including but not limited to ensuring the provision of an adequate water supply for fire suppression, providing sufficient road width for emergency vehicles and equipment, as well as evacuation for residents provided from more than one point, Require applicants to identify identification and maintenance of defensible space around structures, and that structures are built consistent with the most current build code and Cal Fire requirements for high fire hazard areas. ~~and compliance with fire safety standards, and e-Continue~~ to work with local and State fire agencies to ensure that the California Fire Code (with local amendments), County Development Code, and State and local standards for construction are applied uniformly countywide.

~~EHS-4e~~ **5.4.c** **Require Compliance with Fire Department Conditions.** Continue to refer land development and building permit applications to the County Fire Department or

local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

**EHS-4.e 5.4.d Require Sprinkler Systems.** Continue to require installation of automatic fire sprinkler systems in all new structures and existing structures undergoing substantial remodeling, and provide incentives for sprinkler installation in all other habitable structures, especially those in high fire hazard areas.

**EHS-4.f 5.4.e Require Fire-Resistant Roofing and Building Materials.** Continue to require and provide incentives for Class A fire-resistant roofing for any new roof or replacement of more than 50% of an existing roof. Work with Marin County fire departments to prepare and adopt an ordinance requiring fire-resistant building materials in ~~extreme and~~ high fire hazard areas.

**EHS-5.4.f Reduce Risk for Non-Conforming Development.** For existing non-conforming development, the County should work with property owners to improve or mitigate access, water supply and fire flow, signing, and vegetation clearance to meet current State and/or locally adopted fire safety standards.

**EHS-4.h 5.5.a Require Adequate Clearance-Vegetation Removal.** Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property according to State requirements (Public Resource Code 4291) and local ordinances. ~~Require Adequate Clearance. Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property.~~

**EHS-4.i 5.5.b Use Varied Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression.** Collaborate with the Marin Wildfire Prevention Authority Ecologically Sound Practices Partnership which focuses on developing best management practices for fuel reduction projects in wildlands, provides subject matter expertise for project development, and environmental regulatory compliance. Use the best fuel reduction methods (depending on the time of year, fuel types, reduction prescriptions, presence of sensitive biological resources, and cost to implement the Marin County Community Wildfire Protection Plan and Marin Wildfire Prevention Authority projects. This may include using California Department of Forestry inmate crews, the Tamalpais Fuel Crew, the Marin Conservation Corps, animal grazing, or fuel reduction contractors.

**EHS-4.g 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes.** Work with the Marin Fire Agencies, other public agencies, utility districts, and private landowners to construct and maintain ecologically sound fuel breaks and manage

vegetation along emergency access routes to facilitate effective fire suppression and evacuation.

**EHS-5.5.d** **Require Fuel Reduction and Management Plans for New Developments.** The County should require all new development projects with land classified as state responsibility areas (Public Resources Code Section 4102), land classified as high or very high fire hazard severity zones (HFHSZ or VHFHSZs; Section 51177), or within areas defined by local fire agencies as a “wildland urban interface” (WUI), to prepare a long-term comprehensive ecologically sensitive fuel reduction and management program, including provisions for multiple points of ingress and egress to improve evacuation and emergency response access and adequate water infrastructure for water supply and fire flow, and fire equipment access. (See Gov. Code, Section 66474.02.). The ecologically sensitive fuel reduction program should be consistent with MWPA’s ecological sensitive vegetation management guidelines, as well as federal, state, and County environmental and biological resource protection regulations. Where environmental sensitive resources or habitats could be impacted by vegetation removal, the property owner shall observe all regulations for the protection of habitat values.

~~**EHS 5.o** **Support a Fire Management Plan.** Adopt a resolution supporting a Fire Management Plan (including a fuel break plan) and encourage Marin cities and towns to also support its recommendation. [Now a part of 4.3a since there is a CWPP]~~

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>7</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

Figure 2-24 Goal EHS-5. Safety from Wildfire, Program Implementation Table

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-5.1a Collaborate with Marin Fire Agencies on Implementing the Community Wildfire Protection Plan.	Fire Agencies / CDA	Existing budget & may require	High	Ongoing

<sup>7</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

Program	Responsibility	Potential Funding	Priority	Time Frame
		grant funding		
EHS-5.1b Continue FIRESafe Marin Program	Fire Agencies	Existing budget	Med	Ongoing
EHS-5.1.c Provide Information About Fire Hazards	Fire Agencies,	Existing budget	Med	Ongoing
EHS-5.1.d Identify Areas with Insufficient Evacuation Opportunities	Fire Agencies, CDA	Existing budget	High	Short-Term
EHS-5.1.e Commit Funding for Evacuation Safety	Fire Agencies	Existing budget & may require grant funding or additional revenue	High	Short-Term
EHS-5.1.f Monitor State Requirements for Evacuation Routes	Fire Agencies, CDA, DPW	Existing budget	Med	Ongoing
EHS-5.1.g Continue to Use Technology to Promote Fire Safety	Fire Agencies	Existing budget & may require grant funding or additional revenue	Med	Ongoing
EHS-5.2.a Assess and Project Future Fire Protection Needs	Fire Agencies	Existing budget	Med	Med-Term
EHS-5.2.b Consider Development Impacts to Fire Service	Fire Agencies, CDA, DPW	Existing budget	High	Ongoing
EHS-5.2.c Describe Training Needs for Emergency Services	Fire Agencies	Existing budget	Med	Short-Term
EHS-5.2.d Continue to Improve Street Addressing	Fire Agencies	Existing budget	Med	Ongoing
EHS-5.3.a Continue to Revise Adopted Standards	Fire Agencies, CDA	Existing budget	Med	Ongoing
EHS-5.3.b Regularly Update Development Standards	Fire Agencies, CDA	Existing budget	Med	Ongoing
EHS-5.3.c Require Rebuilding After a Disaster to Meet Current Standards	CDA, Fire Agencies	Existing budget	High	Short-Term
EHS-5.3.d Restrict Land Divisions	CDA, Fire Agencies	Existing budget	Med	Ongoing
EHS-5.3.e Conduct Life Safety Assessments	Fire Agencies	Existing budget & may require	Med	Ongoing



<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		grant funds or additional revenue		
EHS-5.4.a Amend Urban Wildlands Interface Regulations	CDA, Fire Agencies	Existing budget	Med	Short-Term
EHS-5.4.b Review Applications for Fire Safety	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.c Require Compliance with Fire Department Conditions	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.d Require Sprinkler Systems	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.e Require Fire Resistant Roofing and Building Materials	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.f Reduce Risk for Non-Conforming Development	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.a Require Adequate Vegetation Removal	Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.b Implement Ecologically Sound Methods of Vegetation Management	Fire Agencies	Existing budget	Med	Short-Term
EHS-5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes	Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.d Require Fuel Reduction and Management Plans for New Development	Fire Agencies, CDA, DPW	Existing budget & may require additional revenue	High	Short-Term





## What Are the Desired Outcomes?

### **Goal EHS-6: Resilience to Climate Change**

Resilience to Climate Change. Manage the threat of climate risks to the current and future Marin community.

#### **Policies**

- EHS-6.1** **Increase Community Resilience.** Increase community resilience to climate change and protection of vulnerable populations. Engage in community education and community-driven planning that leads to identification of community priorities that increase resilience.
- EHS-6.2** **Increase Infrastructure, Building, and Services Resilience.** Increase the resilience of Marin County infrastructure, buildings, and services with an initial focus on nature-based solutions.
- EHS-6.3** **Adapt to Sea Level Rise.** Safeguard the Marin shoreline, coastline, natural resources, recreational resources, and urban uses from flooding due to rising sea levels.
- EHS-6.4** **Plan for Extreme Heat and Weather Events.** Create a community that can continue to function and thrive with an increase in average temperatures, extreme heat days, and severe weather events.
- EHS-6.5** **Adapt Water Supply.** Prepare for a reduced, long-term water supply resulting from more frequent and/or severe drought events.

#### *Why is this important?*

**Environment:** Increased climate hazards create vulnerabilities in both natural and human-made systems that depend on stable and healthy ecosystems.

**Economy:** While resilience is often viewed through the lenses of social equity and environmental quality, business continuity and reducing operational costs and risks is just as vital for Marin's climate resiliency and livability.

**Equity:** Climate hazards will disproportionately affect Marin's vulnerable residents. Increasing the capacity of vulnerable communities to respond and cope with environmental hazards ensures a strong community.

#### *How will results be achieved?*

### **Implementing Programs**

- EHS-6.1.a** **Regular Review of Adaptation and Resiliency Strategies.** Periodically review the County's climate adaptation and resiliency strategies and update them as needed to ensure compliance with state laws and community needs. Use best practices to



review and amend at regular intervals all relevant public codes to incorporate the most current technical knowledge.

- EHS-6.1.b** **Develop Adaptation Plans.** Develop adaptation plans that lead to community resilience. Adaptation plans can be hazard specific or cover multiple hazards, they can cover the entire county or individual communities, but all adaptation plans should recognize the interactions among climate change impacts and should accomplish the following: be consistent with the goals, policies, and programs in this Safety Element; integrate and prioritize equity and social justice; lead to County actions that improve resilience; be phased over time, for example, by including adaptation pathways with identified triggers; incorporate nature-based measures; consider both public and private roles; include identified funding mechanisms for construction, operations and maintenance; include metrics for monitoring; be developed in coordination with relevant jurisdictions, agencies, organizations, and other stakeholders; include measures for continued coordination; and identify a lead jurisdiction, agency or organization.
- EHS-6.1.c** **Integrate Adaptation in Plan Documents.** Integrate climate adaptation into other plans, ordinances, and programs that dictate land use decisions in the community, such as the Countywide Plan, the Marin County Climate Action Plan, County Local Coastal Program, Marin County Multijurisdictional Local Hazard Mitigation Plan, community and area plans, and the Marin County Development Code.
- EHS-6.1.d** **Implement Climate Action Plan.** Implement the adaptation measures as contained in the Marin County Climate Action Plan necessary to increase unincorporated communities' resiliency.
- EHS-6.1.e** **Identify Funding and Support.** Identify funding programs and other support services for local agencies to pursue that could help provide resources for County and community adaptation efforts.
- EHS-6.1.f** **Disclose Current and Future Hazards.** Develop a resale inspection permit program that provides disclosure of hazard risk information to prospective buyers prior to the sale of property. The program should include detailed hazard information, such as very high and high hazard wildfire severity zones, flood zones, tsunamis and future sea level rise inundation areas, and Alquist-Priolo zones.
- EHS-6.1.g** **Develop a Property Rating System.** Based on the information in the resale inspection permit program, develop a property rating system available to the public for the purpose of evaluating risks from current and future hazards. Evaluation of hazards may be one function of a larger rating system or the sole function. The primary purpose of including hazards information is to inform prospective buyers and renters of the risks associated with a property prior to the commencement of any property sale, rental, or lease. Upon completion of the Property Rating System, make the information available to potential renters prior to completing a rental or lease agreement.

**EHS-6.1.h** **Use Environmentally Sensitive Adaptation Strategies.** Where feasible the County should encourage the use of existing natural features and ecosystem processes, or the restoration thereof, in adaptation projects and measures. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze the feasibility of natural features and ecosystem process before proposing alternative measures.

**EHS-6.1.i** **Establish and Leverage Partnerships.** Explore regional compacts or less formal partnerships with regional entities (both public and private) that can assist communities with technical assistance and potential funding. Collaborate with local and regional partners to support business resiliency through preparedness education, trainings, and resources. Align adaptation goals and strategies with local community groups and private sector entities to increase effectiveness.

**EHS-6.1.j** **Assess the Feasibility of Redevelopment.** Encourage private property owners to evaluate redevelopment of sites subject to loss from destructive flooding or wave action. Consider actions the County could take to facilitate the relocation of development out of flood hazard areas and Very High Wildfire Severity Hazard Zones. Consider an acquisition and buyout program which includes acquiring land from the landowner(s) and restricting future development on the land. Engage communities on the topic of managed retreat and provide assistance to establish a supporting funding mechanism such as a community land trust or repetitive loss program or Geologic Hazard Abatement Districts. Consider use of sites repeatedly struck by climate hazards for flood-adapted restoration or recreational areas.

**Implementing Programs for EHS-6.2 Increase Infrastructure, Building, and Services Resilience.**

**EHS-6.2.a** **Minimize Utility Service Interruptions.** Work with utility companies to ensure that power lines serving the unincorporated areas are maintained to avoid power shutoffs, minimize damage during extreme events, and reduce the risk of wildfires.

**EHS-6.2.b** **Assess Risk in County-Owned Buildings and Facilities.** Support capital planning to incorporate a climate risk evaluation of County-owned buildings and facilities that identifies risks from climate hazards, identifies measures to minimize risk, and provides a plan(s) for making improvements.

**EHS-6.2.c** **Broaden Communication Service and Minimize Communication Service Interruptions.** Prepare an analysis of gaps in communication services within the County and identify measures for broadening coverage, especially where communication facilities are needed to provide essential services. The analysis should include recommendations for new facilities locations, whether facilities can serve multiple functions, prioritization of facility locations that considers both the

communication services and the environmental impacts and administrative burdens of such facilities. (Also see Implementing Program EHS-1.1b under Goal EHS-1).

**EHS-6.2.d** **Support Resiliency for Financially Constrained Households.** Identify funding opportunities, including grant assistance programs, to support structural strengthening, renewable energy generation systems, and weatherizing and other energy efficiency activities, for low-income renters and property owners. (Also see Implementing Programs EHS1.1.b under Policy EHS-1.1 and Program 1.4.a under Policy EHS-1.4.)

**EHS-6.2.e** **Integrate Natural Infrastructure.** During the development review process, when developing alternatives and addressing adaptation in proposed projects, the County should require applicants to identify natural infrastructure that may be used through the conservation, preservation, or sustainable management of open space to reduce climate change hazards. Proposals addressing adaptation must analyze the feasibility of integrating natural infrastructure before proposing alternative measures.

### **Implementing Programs for EHS-6.3 Adapt to Sea Level Rise**

**EHS-6.3.a** **Employ Sea Level Rise Scenarios in Planning.** Recent predictions of sea level rise for the San Francisco Bay region by BCDC and USGS based on climate models and hydrodynamic modeling of the San Francisco Bay Estuary Institute indicate 16 inches of rise by mid-century and 55 inches by 2100. The State periodically recommends and updates a range of sea level rise scenarios for planning purposes. The guidance is developed using the best available science and the modeling is based on internationally accepted greenhouse gas scenarios used by the United Nations Intergovernmental Panel on Climate Change. The County should cooperate with state, federal, and other monitoring agencies to track bay and ocean levels and share baseline topographic and resource data obtained by the County in implementing its own projects to enhance hydrodynamic and ecosystem modeling efforts and assessment of regional climate change impacts. Use official estimates for mean sea level rise and topographic data for environmental review. Project design and environmental review for development applications and County sponsored projects infrastructure should incorporate official mid-century sea level rise estimates, the most current State of California recommendations for sea level rise scenarios as appropriate for the risk tolerance and expected life of the project, and require adaptive strategies for end-of-century sea level rise for any such project with expected life times beyond 2050.

**EHS-6.3.b** **Amend the Bayfront Conservation Combining District (BFC).** Amend the Bayfront Conservation Combining District, Marin County Code Title 22, to incorporate sea level rise adaptation measures that promote public safety consistent with the goals of the BFC.

**EHS-6.3.c** **Explore Future Bayland Corridor Amendment.** Explore expanding and aligning the Baylands Corridor and BFC area to align both the geographic extent and the policy

direction. The geographic extent should include areas subject to future flooding and related policies and programs should include standards to protect from or adapt to rising sea level.

**EHS-6.3.d** **Advocate with State and Federal Agencies.** Advocate with state and federal resource agencies for new policies making living shoreline projects more easily permitted by recognizing the long-term habitat and biodiversity benefits.

**EHS-6.3.e** **Update Other Elements of the Countywide Plan.** Update other Elements of the Countywide Plan to reflect the County’s approach to Sea Level Rise planning, where nature-based alternatives are evaluated and implemented whenever they will achieve project objectives.

**EHS-6.3.f** **Take a Leadership Role in Multijurisdictional Sea Level Rise Planning.** Identify funding and resources for a multijurisdictional approach to sea level rise adaptation planning. Include representation from each jurisdiction and identify countywide priorities for adapting to sea level rise. (Also see Develop Adaptation Plans EH-6.1.b.)

**EHS-6.3.g** **Plan for Climate Change Impacts, Including Sea Level Rise. Consider Sea Level Rise in Flood Control Planning and Projects.** Consider sea level rise in future countywide and community plan flood control efforts. Apply for membership in the National Flood Insurance Program’s (NFIP) Community Rating System (CRS), and as appropriate through revisions to the Marin County Code, obtain reductions in flood insurance rates offered by the NFIP to community residents. official mid-century and end-of-century sea level rise estimates in Participate in the Bay Area Climate & Energy Resilience Project and its March 2013 Proposed 12-Month Action Plan, developed by the Bay Area Joint Policy Committee of the Association of Bay Area Governments. Cooperate with FEMA in its efforts to comply with recent congressional mandates to incorporate predictions of sea level rise in its Flood Insurance Studies and FIRM. Periodically revise the Marin County Hydrology Manual to, at a minimum, incorporate use of the most recent updated rainfall frequency data from NOAA’s Atlas 14 Volume 6, Vers. 2.1 California (rev. 2012).

**EHS-6.3.h** **Partner to Protect Key Infrastructure Owned and Operated by Others.** The County is dependent on key infrastructure such as water supply systems, waste water treatment systems, roads and bridges, electricity grid, and telecommunications that are owned and maintained by numerous agencies and private companies. Marin County should develop a systematic approach to collaborating and working cooperatively with these entities to ensure the long-term, continued functioning of key infrastructure within Marin County.

**EHS-6.3.i** **Limit Seawall Barriers.** Limit repair, replacement, or construction of coastal sea walls and erosion barriers in order to avoid offsite impacts consistent with Local Coastal Program requirements and San Francisco Bay Conservation and

Development Commission standards, and as demonstrated to be necessary to protect persons and properties from rising sea level.

**EHS-6.3.j** **Strengthen Sea Level Rise Education and Outreach Programs.** Sea level rise adaptation planning can only be successful when communities understand the interrelated impacts of future sea level rise and the range of options to address those impacts through time. The County should develop more robust sea level rise education and outreach to help communities have informed discussions around adaptation options, adaptation pathways, costs, and where responsibilities for protecting assets lie.

**EHS-6.3.k** **Study Impacts of Rising Groundwater Levels from Sea Level Rise.** Conduct studies on the effects of rising groundwater on the community and the built environment including the potential transport of toxic or hazardous chemicals in the soil at contamination sites and the effects on septic systems. In areas where rising groundwater levels could adversely impact the functioning of existing or future septic systems, the County will undertake a study to identify the hazards and identify solutions.

**Implementing Programs for EHS-6.4 Plan for Extreme Heat and Weather Events.**

**EHS-6.4.a** **Develop Resilience Hubs.** Work with vulnerable populations to develop and implement a plan that identifies priority resilience hub locations and outlines necessary steps to build hubs that serve multiple purposes, including community centers in non-emergency and emergency situations, operations and aide distribution centers in emergencies, and recovery centers post emergencies. The plan should include siting criteria that prioritizes serving the needs of vulnerable populations and using that criteria to identify potential sites in the county. For each priority site, the plan should identify potential hub functions, needed improvements to existing facilities, development and operation costs (including any avoided costs as a result of building the hubs), feasibility of installing microgrids to sustain power in emergencies, and potential funding and financing mechanisms.

**EHS-6.4.b** **Ensure Access to Cooling Centers.** Identify areas in Marin County where cooling centers are needed and where they can be located within resilience hubs. Identify ways for individuals with restricted mobility to reach cooling centers

**EHS-6.4.c** **Support Heat Risk Awareness.** Provide guidance to employers, residents, and workers to ensure that outdoor workers are aware of the harm posed by climate-related heat effects and how to reduce them. Partner with private sector and community-based organizations to increase information spread.

**Implementing Programs for EHS-6.5 Adapt Water Supply.**

**EHS-6.5.a** **Plan for Drought.** Prepare for a reduced, long-term water supply resulting from more frequent and severe drought events, including working with regional water providers to implement extensive water conservation measures and ensure

sustainable water supplies including increasing recycled water infrastructure and capacity.

**EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency.** Improve water storage and efficiency by partnering with the following water managers: water agencies and irrigation districts to explore ways to improve and increase storage capacity and generation efficiency; utility providers to upgrade water systems to accommodate projected changes in water quality and availability; and local water providers in the county to increase participation in water conservation programs to reduce water use throughout Marin County.

**EHS-6.5.c Maintain Adequate Agricultural Water Supply.** The County should encourage policies that preserve and protect adequate and affordable agricultural irrigation water supplies for commercial farmers and ranchers to maximize potential wildland fire mitigation, habitat benefits, carbon sequestration, and economic activity. (See Goal AG-1 in the Agriculture and Food Section, PFS-2 in the Public Facilities and Services Section, and WR-3 in the Water Resources Section.)

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>8</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-25: Goal EHS-6. Resilience to Climate Change, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-6.1. a Regular Review of Adaptation and Resiliency Strategies	CDA, DPW, County Parks, Fire Agencies, OES, HHS	Existing budget & new grant funds or revenue	Med	Long-Term & Ongoing
EHS-6.1.b Develop Adaptation Plans	CDA, DPW	Will require new grant funds or revenue	Med	Short-Term

<sup>8</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).



<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
EHS-6.1.c Integrate Adaptation in Plan Documents	CDA, DPW	Existing budget	Med	Long-Term
EHS-6.1.d Implement Climate Action Plan	CDA, DPW	Existing budget	High	Long-Term & Ongoing
EHS-6.1.e Identify Funding and Support	CDA, DPW	Existing budget	High	Short-Term
EHS-6.1.f Disclose Current and Future Hazards	CDA	Existing budget & may require additional revenue	High	Short-Term
EHS-6.1.g Develop a Property Rating System	CDA	Existing budget & may require additional revenue	High	Short-Term
EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies	CDA, DPW, County Parks	Existing budget	Med	Short-Term and Ongoing
EHS-6.1.i Establish and Leverage Partnerships	Countywide	Existing budget	High	Ongoing
EHS-6.1.j Assess the Feasibility of Redevelopment	CDA	Existing budget & may require additional resources		
EHS-6.2.a Minimize Utility Service Interruptions	Private & Public Utilities, DPW, OES	Existing budget and may require additional funds	High	Short-Term
EHS-6.2.b Assess Risk in County-Owned Building and Facilities	DPW, OES	Requires additional funding	High	Med-Term
EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions	Private Communication Companies, OES, Fire Agencies, CDA, County Parks	Existing budget	High	Med-Term



<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
EHS-6.2.d Support Resiliency for Financially Constrained Households	CDA, OES, Fire Agencies,	Will require additional revenue	High	Long-Term
EHS-6.2.e Integrate Natural Infrastructure	CDA, DPW, state & federal resource agencies	Existing budget	Med	Long-Term
EHS-6.3.a Employ Sea Level Rise Scenarios in Planning	CDA, DPW, County Parks	Existing budget	Med	Short-Term & Ongoing
EHS-6.3.b Amend the Bayfront Conservation Combining District	CDA	Existing budget	High	Short-Term
EHS-6.3.c Explore Future Bayland Corridor Amendment	CDA	Existing budget	Med	Med-Term
EHS-6.3.d Advocate with State and Federal Agencies	Countywide	Existing budget	Med	Short-Term
EHS-6.3.e Update Other Elements of the Countywide Plan	CDA	Existing budget	Med	Long-Term
EHS-6.3.f Take a Leadership Role in Multijurisdictional Sea Level Rise Planning	DPW, CDA, County Parks, Countywide	Existing budget & may require additional funding	High	Short-Term
EHS-6.3.g Consider Sea Level Rise in Flood Control Planning and Projects	DPW	Existing budget	High	Ongoing
EHS-6.3.h Partner to Protect Key Infrastructure Owned and Operated by Others	Countywide, CDA, DPW	Existing budget	Med	Med-Term
EHS-6.3.i Limit Seawall Barriers	CDA	Existing budget	Low	Ongoing
EHS-6.3.j Strengthen Sea Level Rise Education and Outreach Programs	DPW, CDA, County Parks	Existing budget & may need additional resources	High	Short-Term
EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise	CDA	Existing budget & will require additional grant funding	Med	Med-Term
EHS-6.4.a Develop Resilience Hubs	CDA	Existing budget & will require additional	High	Med-Term





<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		grant funding		
EHS-6.4.b Ensure Access to Cooling Centers	CDA, OES, Fire Agencies	Existing budget & may require additional resources	Med	Long-Term
EHS-6.4.c Support Heat Risk Awareness	CDA	Existing budget	Med	Long-Term
EHS-6.5.a Plan for Drought	Countywide, Water Districts	Existing budget	High	Long-Term
EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency	Countywide, Water Districts	Existing budget	High	Long-Term
EHS-6.5.c Maintain Adequate Agricultural Water Supply	Countywide, Water Districts	Existing budget	Med	Long-Term

## Program Implementation and Monitoring

### Relationship of Goals to Guiding Principles

Figure 2-26: Relationship of Goals to Guiding Principles Table

This figure illustrates the relationship of each goal in this Section to the Guiding Principles.

Goals	Guiding Principles	Link equity, economy, and the environment locally, regionally, and globally.	Minimize the use of finite resources, and use all resources efficiently and effectively.	Reduce the use and minimize the release of hazardous materials.	Reduce greenhouse gas emissions that contribute to global warming.	Preserve our natural assets.	Protect our agricultural assets.	Provide efficient and effective transportation.	Supply housing affordable to the full range of our members of the workforce and diverse community.	Foster businesses that create economic, environmental, and social benefits.	Educate and prepare our workforce and residents.	Cultivate ethnic, cultural, and socioeconomic diversity.	Support public health, safety, and social justice.
EHS-1 Equitable Community Safety Planning		•									•		•
EHS-2 Disaster Preparedness, Response, and Evacuation		•									•		•
EHS-3 Safety from Seismic and Geologic Hazards		•									•		•
EHS-4 Safety from Flooding		•									•		•
EHS-5 Safety from Wildfire		•				•					•		•
EHS-6 Resilience to Climate Change		•				•			•		•		•



## How Will Success Be Measured

### Indicator Monitoring

Nonbinding indicators, benchmarks, and targets will help to measure and evaluate progress.<sup>9</sup> This process will also provide a context in which to consider the need for new or revised implementation measures.

**Figure 2-27 Indicator Monitoring Table**

<b>Indicator</b>	<b>Benchmark</b>	<b>Target</b>
Number of Marin residents trained in GetReady, CERT, and Voluntary Disaster Service Workers.	Pending	2.5% of county population trained by 2025 and 3% trained by 2030.
Number of county employees trained as disaster service workers to federal standards as documented by County Human Resources.	Pending	100% of County emergency first responders, Emergency Operations Center staff, and other County employees with designated disaster response roles by 2025 and maintain indefinitely. 100% of trained employees to repeat at least one disaster response training class once every two years.
Regularly updated climate change modeling information and mapping.		Triannual review and revisions, if needed, to the County’s climate change modeling projections and hazard mapping.
Number of retrofitted or relocated County buildings and critical facilities.		25% of identified at-risk County-owned structures and critical facilities retrofitted or relocated by 2030, and 50% retrofitted or relocated by 2050.
Number of retrofitted or relocated miles of County roads.		25% of identified at-risk County-maintained road miles retrofitted or relocated by 2040, and 50% retrofitted or relocated by 2050.

<sup>9</sup> Many factors beyond Marin County government control, including adequate funding and staff resources, may affect the estimated time frame for achieving targets and program implementation.



Reviewed and updated climate adaptation and resiliency strategies.		Annual review of climate adaptation and resiliency strategies, and updated strategies as needed, in perpetuity.
Percentage of upgraded County-maintained utilities facilities and infrastructure.		25% of identified at-risk County-maintained utilities facilities and infrastructure upgraded by 2030, 50% upgraded by 2035.
Regularly updated vulnerable communities database and mapping.		Following database development, biannual updates of vulnerable communities data and mapping, in perpetuity.

### **Program Implementation**

The ~~Program Implementation Tables summarizing responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs appear below the programs for each goal. Program implementation within the estimated time frame will be dependent upon the availability of adequate funding and staff resources.~~

[Note to Reader: Program Implementation Tables were moved to the end of each Goal section]



CANDIDATE HOUSING SITES – WITH SIZE, LAND USE, ZONING, PROPOSED UNITS  
(INCLUDING DENSITY BONUS)

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
1	0.4	MF3	RMP-6	-	3	-	3	4
2	3.0	GC	CP	72	-	-	72	97
3	6.6	NC	RMPC	98	68	-	166	224
4	148.7	SF3	A2-B4	-	-	139	139	188
5	33.0	PF-OS	PF	254	-	-	254	343
6	20.1	GC	CP	60	60	60	180	243
7	5.5	GC	CP	136	-	-	136	184
8	9.5	PF-SF6	PF-RSP-4.36	-	59	12	71	96
9	7.7	PF-SF6	PF-RSP-5.8	186	-	-	186	251
10	7.5	C-NC	C-VCR	64	11	-	75	101
11	522.4	PR	RMP-0.1	90	-	-	90	122
12	774.6	PD	A2	600	600	600	1,800	2,430
13	2.9	GC	H1	-	60	-	60	81
14	14.3	SF5	A2-B2	71	13	-	84	113
15	1.8	NC	RMPC-6	45	-	-	45	61
16	24.6	SF3	A2-B4	516	-	-	516	697
17	40.6	AG2	ARP-20	-	-	98	98	132
18	0.9	C-NC	C-VCR	9	-	-	9	12
19	488.5	AG1	A60	-	-	314	314	424
20	233.8	AG1	A60	-	-	249	249	336
21	10.0	MF2	RSP-4	81	-	57	138	186
22	3.2	PR	RMP-0.1	-	32	-	32	43
23	4.2	PF	PF	108	-	-	108	146
25	0.8	NC	RMPC	-	4	-	4	5
26	16.0	C-RC	C-RCR	-	96	-	96	130
27	0.6	C-NC	C-RMPC	-	9	-	9	12
28	1.2	C-SF5	C-RA-B2	-	7	-	7	9
29	2.5	C-NC	C-VCR-B2	25	-	-	25	34
30	19.6	AG1	ARP-60	-	-	53	53	72
31	0.6	PF-SF4	PF-RSP-2	-	-	5	5	7
32	0.2	C-GC	C-CP	-	8	-	8	11
33	1.0	C-SF3	C-RSP-0.33	-	-	12	12	16
34	3.6	C-SF3	C-RSP-1	-	-	20	20	27
45	3.2	C-RC	C-RCR	-	16	-	16	22
46	2.2	RC	BFC-RCR	36	-	-	36	49
47	2.4	PF-SF5	R1-B2	-	14	-	14	19

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
52	49.2	PR	RMP-0.5	-	-	25	25	34
53	59.0	AG1	A60	-	-	26	26	35
54	1.8	SF6	R1	-	15	-	15	20
55	0.9	NC	RMPC-1	9	-	-	9	12
56	13.9	AG1	ARP-60	16	-	-	16	22
57	6.5	PR	RMP-0.2	-	-	26	26	35
58	1.6	GC	C1	36	-	-	36	49
60	0.1	NC	VCR	-	2	-	2	3
61	2.2	GC	H1	26	4	-	30	41
63	2.4	GC	CP	58	-	-	58	78
64	3.6	C-NC	C-VCR	24	-	-	24	32
65	27.9	SF5	A2-B2	-	-	45	45	61
66	16.3	PR	RMP-0.2	-	-	32	32	43
67	4.1	SF6	RA-B1	20	-	-	20	27
68	1.2	SF5	R1-B2	-	15	-	15	20
69	0.6	C-SF4	C-RA-B3	-	3	-	3	4
70	31.4	C-OS	C-OA	50	-	-	50	68
71	2.3	C-NC	C-RMPC	37	-	-	37	50
72	2.6	C-NC	C-VCR-B2	26	-	-	26	35
73	1.0	C-NC	C-VCR-B2	17	-	-	17	23
74	2.1	C-NC	C-VCR-B2	24	-	-	24	32
76	2.4	SF6	R1	56	8	-	64	86
80	0.2	C-GC	C-CP	-	8	-	8	11
81	23.4	RC	RCR	-	-	29	29	39
83	2.7	SF5	A2-B2	-	-	5	5	7
85	0.3	GC	C1	-	5	-	5	7
86	0.7	GC	C1	-	12	-	12	16
88	0.7	GC	C1	-	11	-	11	15
89	4.2	C-SF3	C-RSP-1.6	43	6	1	50	68
93	1.3	SF6	R1	31	-	-	31	42
94	2.0	MF4.5	RMP-16.7	-	13	-	13	18
95	0.9	C-SF6	C-R1	-	-	5	5	7
96	1.4	C-NC	C-VCR	-	19	-	19	26
99	0.3	C-SF6	C-R1	-	-	3	3	4
101	14.7	GC	RMPC	100	-	-	100	135
102	3.0	PR	RMP-0.1	-	4	-	4	5
103	0.8	GC	CP	20	-	-	20	27
104	0.5	MF4.5	RMP-12.45	12	-	-	12	16

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
105	0.4	GC	C1	-	8	-	8	11
106	1.3	C-NC	C-VCR-B1	-	11	-	11	15
109	2.0	C-NC	C-VCR-B1	-	13	-	13	18
110	0.7	C-SF3	C-RSP-1.6	13	-	1	14	19
111	0.7	C-NC-PF	C-VCR-B4	-	7	-	7	9
112	0.6	C-NC	C-VCR-B1	-	6	-	6	8
114	55.1	SF3	ARP-2	-	100	28	128	173
115	19.8	C-AG2	C-ARP-10	-	40	-	40	54
116	0.2	NC	RMPC-1	-	4	-	4	5
117	18.3	C-SF5	C-RA-B2	22	16	59	97	131
124	1.0	SF6	R1	-	-	3	3	4
125	0.7	SF6	R1-B1	-	-	-	-	-
126	6.3	C-NC	C-VCR-B1	-	13	17	30	41
131	2.3	C-GC	C-CP	-	10	-	10	14
132	3.1	C-GC	C-CP	-	10	-	10	14
133	6.5	SF3	RA-B4	-	20	-	20	27
134	0.9	SF4	R1-B3	16	-	-	16	22
136	2.6	SF5	R1-B2	-	10	-	10	14
139	0.5	NC	VCR	-	7	-	7	9
140	5.8	SF3	ARP-2	88	-	-	88	119
141	5.8	SF3	ARP-2	-	59	-	59	80
144	19.2	SF3	ARP-2	46	159	-	205	277
146	8.4	PF	PF	-	63	-	63	85
147	1.5			-	-	5	5	7
148	3.1			46	-	-	46	62
<b>Subtotal</b>	<b>2,874.4</b>			<b>3,287</b>	<b>1,741</b>	<b>1,929</b>	<b>6,957</b>	<b>9,392</b>
<b>Credit Sites<sup>[a]</sup></b>								
A	1.8	C-SF5	C-RA-B2	8	-	-	8	8
B	0.2	C-SF5	C-RA-B2	2	-	-	2	2
C	1.2	MF3	RMP-9	1	-	8	9	9
D	0.9	GC	CP	-	-	10	10	10
E	109.5	PR	RMP-0.2	-	-	43	43	43
F	55.2	PF	A2-B2	115	115	-	230	230
G	10.8	MF2	RMP-1.0	-	-	10	10	10
H	25.1	MF2	RMP-2.47	-	-	89	89	89
I	1.0	MF4.5	RMP-34	74	-	-	74	74

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
J	0.5	C-SF5	C-RA-B2	2	-	-	2	2
Subtotal	<b>234.0</b>			<b>202</b>	<b>115</b>	<b>160</b>	<b>477</b>	<b>477</b>
ADUs <sup>[b]</sup>	N/A	N/A	N/A	154	77	25	256	256
SB 9 units <sup>[c]</sup>	N/A	N/A	N/A	--	434	434	868	868
<b>Total Proposed Housing Sites</b>							<b>8,558</b>	<b>10,993</b>

SOURCE: MIG, County of Marin; 2022.

*Notes:*

[a] "Credit Sites" are housing units either under construction or approved that are applicable to the County's RHNA target.

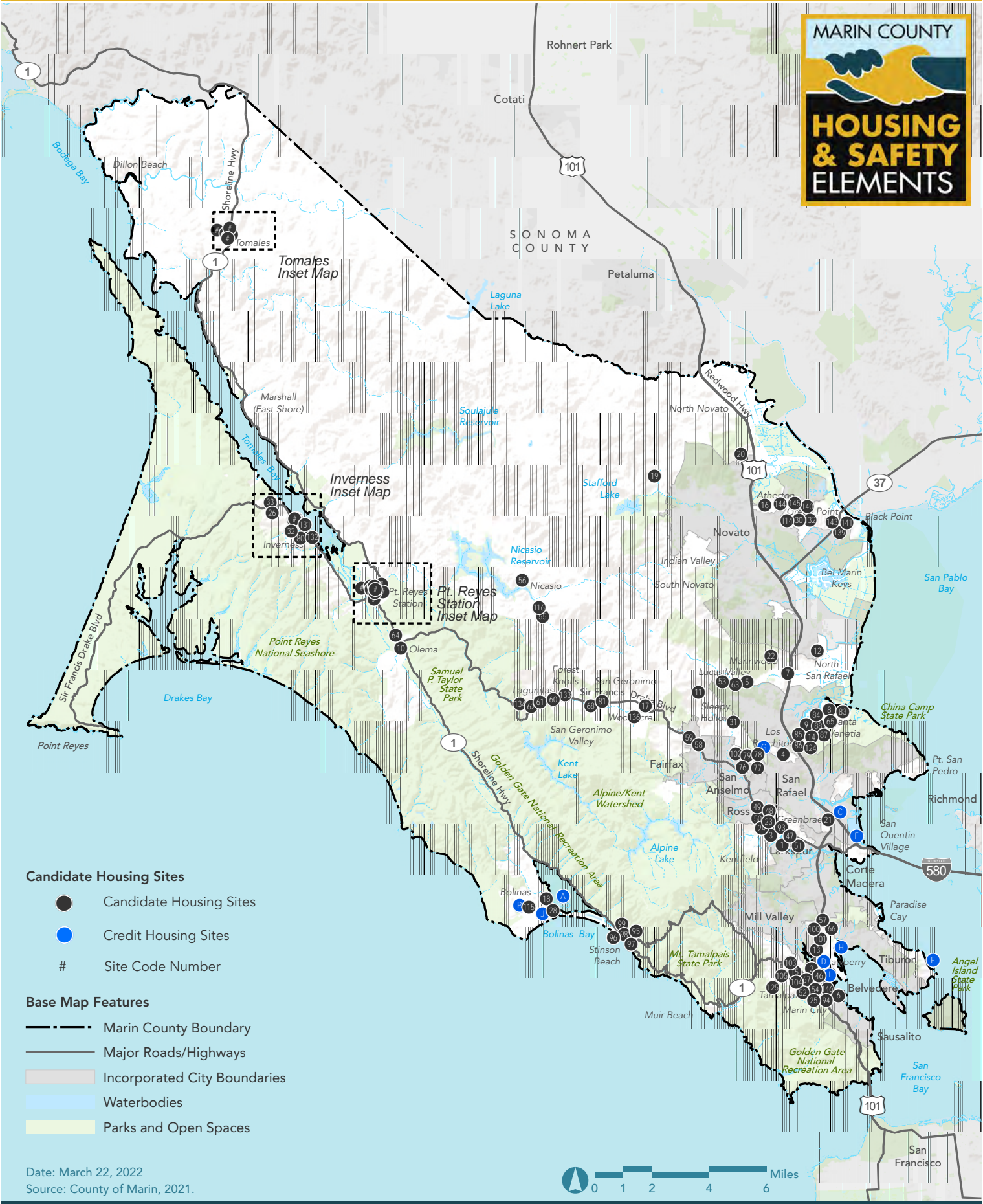
[b] "ADU" = Accessory Dwelling Unit

[c] "SB 9 units" are units allowable under SB9, also known as the California Housing Opportunity and More Efficiency (HOME) Act, which requires jurisdictions to allow one additional residential unit onto parcels zoned for single-dwelling units, not including accessory dwelling units (ADUs).

*Land Use and Zoning Abbreviations:*

- A60 = Agriculture and Conservation
- A2 = Agriculture Limited
- A2-B2 = Agriculture Limited
- AP = Administrative and Professional
- R1 = Residential Single Family
- RMP-1 = Residential Multiple Planned
- RSP-4 = Residential Single Family Planned
- RMP-0.2 = Residential Multiple Planned
- RMP-0.1 = Residential Multiple Planned
- RMP-0.5 = Residential Multiple Planned
- C-R1 = Residential Single Family
- RMPC-1 = Residential Commercial Multiple Planned
- C-VCR-B2 = Village Commercial Residential
- C-RSP-7.26 = Residential Single Family Planned
- C-VCR-B1 = Village Commercial Residential
- ARP-2 = Agriculture Residential Planned
- RMP = Residential Multiple Planned
- RMP-6 = Residential Multiple Planned
- BFC-RCR = Resort and Commercial Recreation
- H1 = Limited Roadside Business
- VCR = Village Commercial Residential
- VCR-B2 = Village Commercial Residential
- C-VCR = Village Commercial Residential
- CP = Planned Commercial
- PF = Public Facilities
- PF-RSP-4.36 = Residential Single Family Planned
- PF-RSP-5.8 = Residential Single Family Planned





**Candidate Housing Sites**

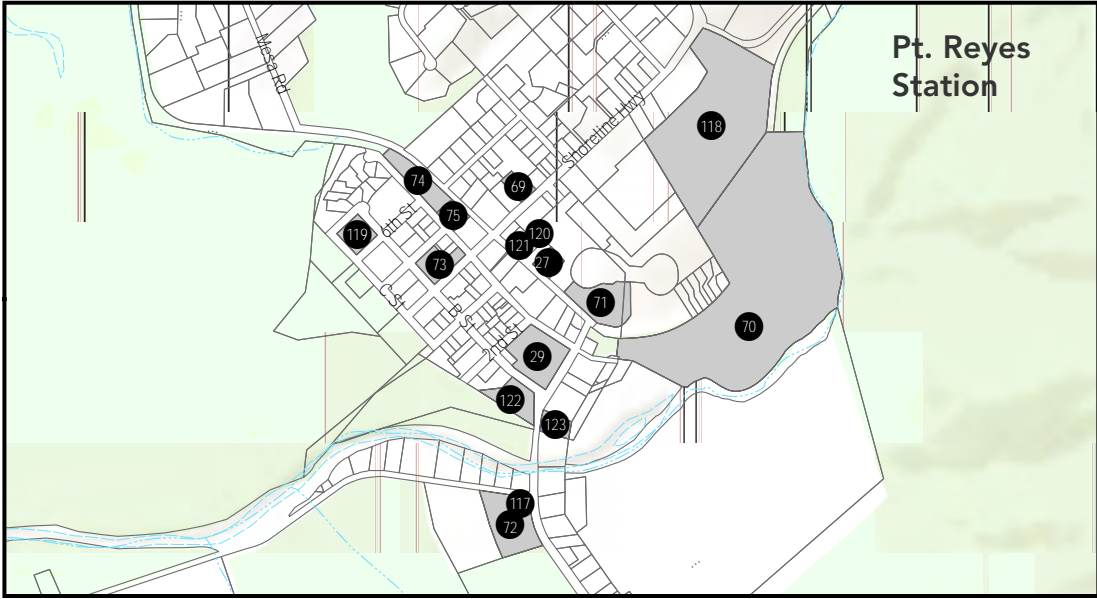
- Candidate Housing Sites
- Credit Housing Sites
- # Site Code Number

**Base Map Features**


- Marin County Boundary
- Major Roads/Highways
- Incorporated City Boundaries
- Waterbodies
- Parks and Open Spaces

Date: March 22, 2022  
 Source: County of Marin, 2021.





- Candidate Housing Sites**
- Candidate Housing Sites
  - # Site Code Number
- Base Map Features**
- Marin County Boundary
  - Major Roads/Highways
  - Incorporated City Boundaries
  - Waterbodies
  - Parks and Open Spaces

 Date: January 31, 2022  
 Source: County of Marin, 2021.

## **Appendix C: Supplemental Air Quality and Greenhouse Gas Emissions Information**

---

*This page is intentionally blank.*

**Marin County Housing and Safety Element Update EIR**  
**AB2588 "Hot Spots" Facilities in Marin County**  
**Compiled by MIG, Inc.**

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
21894	100 WOOD HOLLOW DRIVE OWNER LLC	100 WOOD HOLLOW	NOVATO	94945	0.001759	0.001545	0.01083	0.063868	5.08E-05	0.000916	0.00088
22443	32 SHADY LANE RESIDENCE	32 SHADY LANE	ROSS	94957	5.93E-05	5.52E-06	0.000491	1.15E-07	1.2E-08	2.15E-07	2.15E-07
24029	33 NORTH APARTMENTS	33 SAN PABLO AVENUE	SAN RAFAEL	94903	4.81E-05	4.23E-05	0.000195	0.000785	1.68E-06	2.97E-05	2.85E-05
112217	ALL STAR RENTS	875 OLIVE AVE	NOVATO	94945	0.00028	0.00028					
17417	ALMAVIA OF SAN RAFAEL	515 NORTHGATE DRIVE	SAN RAFAEL	94903	0.000519	0.000456	0.001997	0.009865	1.47E-05	0.000459	0.000441
14016	ALTA MIRA HOTEL	125 BULKLEY	SAUSALITO	94965						0.0004	0.00028
15123	AMERICAN TOWER - BURDELL MOUNTAIN - 89301	N OF NOVATO	NOVATO	94945	0.000656	0.000576	0.012224	0.012364	2.57E-05	0.000515	0.000495
15124	AMERICAN TOWER - TAMALPAIS - 8521	2001 RIDGECREST BLVD	MILL VALLEY	94941	9.38E-07	8.24E-07	2.54E-06	5.77E-06	5E-09	1E-07	9.6E-08
200057	ANGEL ISLAND STATE PARK	ANGEL ISLAND	TIBURON	94920	0.154746	0.154746					
18679	AT & T /MOBILITY	615 ATHERTON AVE	NOVATO	94945	0.000316	2.94E-05	0.005112	0.001412	4.19E-05	4.53E-05	4.53E-05
17904	AT&T	2ND STREET & B STREET	POINT REYES STA	94956	0.009199	0.008081	0.035569	0.10512	4.14E-05	0.005564	0.005341
18422	AT&T CA	7 PROFESSIONAL CTR PKWY	SAN RAFAEL	94903	0.006694	0.005881	0.024342	0.127187	0.000179	0.001947	0.001869
17991	AT&T CORP	1000 CAMBRIDGE ST	NOVATO	94947	0.000446	0.000392	0.004552	0.01575	5.96E-06	0.000963	0.000925
21603	AT&T MOBILITY	10300 REDWOOD HWY	NOVATO	94945	0.001135	0.000106	0.003059	0.001117	4.11E-05	0.0002	0.0002
16759	AT&T MOBILITY /AT&T SERVICES	3000 BAYHILLS DRIVE	SAN RAFAEL	94901	0.00203	0.001783	0.005489	0.025473	9.95E-06	0.000217	0.000209
17570	AT&T MOBILITY /AT&T SERVICES	SAN QUENTIN, STATE PRISON	SAN QUENTIN	94964	0.000158	1.47E-05	0.005973	0.001711	4.78E-05	5.16E-05	5.16E-05
20039	ATRIA SENIOR LIVING GROUP	853 TAMALPAIS AVE	NOVATO	94947	0.000427	0.000375	0.001591	0.011455	1.75E-05	0.000382	0.000367
18831	AUTODESK INC	3900 CIVIC CENTER DR	SAN RAFAEL	94903	0.024456	0.021484	0.207872	0.168744	0.000134	0.009782	0.009391
16215	BAYVIEW BUSINESS PARK OWNER'S ASSOCIATION	KERNER BLVD & PELICAN BLVD	SAN RAFAEL	94912	73.62229	0.485907		0.004023			
18058	BEST BUY COMPANY, INC	700 DUBOIS STREET	SAN RAFAEL	94901	0.000484	0.000425	0.001916	0.00846	9.62E-06	0.000486	0.000467
17052	BIOMARIN PHARMACEUTICAL INC	46 GALLI DRIVE	NOVATO	94949	9.959819	3.765351	2.145366	8.719888	0.016738	0.263998	0.262363
21363	BIOMARIN PHARMACEUTICAL INC	770 LINDARO STREET	SAN RAFAEL	94901	0.304957	0.130788	0.51229	3.01569	0.01679	0.29496	0.294919
20933	BIOSEARCH TECHNOLOGIES, INC	51 DIGITAL DRIVE	NOVATO	94949	0.000752	0.00066	0.00197	0.014282	1.81E-05	0.000197	0.000189
19381	BLUE LINE STERLIZATION SERVICES	401 BEL MARIN KEYS BLVD, UN	NOVATO	94949	0.00097	0.000823					
100429	BOLINAS FIRE DEPT	100 MESA RD	BOLINAS	94924	0.001844	0.001844					
111262	BOLINAS GARAGE	6 WHARF ROAD	BOLINAS	94924	0.023911	0.023911					
20644	BUCK INSTITUTE FOR AGE RESEARCH	8001 REDWOOD BLVD	NOVATO	94945	0.020351	0.017878	0.043891	0.326811	0.000782	0.005999	0.005759
200750	C & C EQUIPMENT COMPANY	BIG ROCK RIDGE ROAD AND BU	NOVATO	94946	0.000425	0.000373	0.00317	0.008171	1.79E-05	0.000425	0.000408
15816	CAL-POX, INC	103 SHORELINE PARKWAY	SAN RAFAEL	94901	259.3736	1.711866		0.01419			
14571	CALIFORNIA HIGHWAY PATROL	53 SAN CLEMENTE DRIVE	CORTE MADERA	94925	0.003773	0.000351	0.06244	0.026531	8.35E-05	0.000111	0.000111
100267	CALIFORNIA HIGHWAY PATROL	53 SAN CLEMENTE DR	CORTE MADERA	94925	0.0167	0.0167					
653	CENTRAL MARIN SANITATION AGENCY	ANDERSEN DRIVE, EAST END	SAN RAFAEL	94901	28.81053	4.599175	9.073886	4.699828	0.740867	0.895223	0.889633
22540	CHEN RESIDENCE	3910 PARADISE DRIVE	TIBURON	94920	0.001259	0.000117	0.009974	0.002418	1.33E-05	1.5E-05	1.5E-05
109816	CHINA CAMP STATE PARK	SAN PEDRO ROAD ROUTE 1	SAN RAFAEL	94901	0.000164	0.000164					
100555	CITY OF BELVEDERE	85 LAGOON RD	BELVEDERE	94920	0.001076	0.001076					
16106	CITY OF MILL VALLEY	SYCMR PRK NR TH CIRCLE	MILL VALLEY	94941	0.000354	0.000311	0.001069	0.002194	2.28E-06	7.02E-05	6.74E-05
19147	CITY OF MILL VALLEY	1 HAMILTON DRIVE	MILL VALLEY	94941	0.001243	0.001092	0.010731	0.040421	2E-05	0.002685	0.002578
19148	CITY OF MILL VALLEY	450 SYCAMORE AVENUE	MILL VALLEY	94941	1.868933	1.8523	51.57034	4.057698	0.093587	0.030058	0.028856
19149	CITY OF MILL VALLEY	26 CORTE MADERA AVENUE	MILL VALLEY	94941	2.38E-05	2.09E-05	3.91E-05	0.000442	7.62E-07	7.36E-07	7.06E-07
106313	CITY OF MILL VALLEY	450 SYCAMORE AVE	MILL VALLEY	94941	0.012007	0.012007					

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
19177	CITY OF NOVATO	909 MACHIN AVENUE	NOVATO	94945	0.00109	0.000957	0.016387	0.018422	2.96E-05	0.00078	0.000749
19216	CITY OF NOVATO	550 DAVIDSON STREET	NOVATO	94945	0.00057	0.000501	0.000774	0.010009	1.06E-05	0.000324	0.000311
19385	CITY OF NOVATO	134 PIZARRO ROAD	NOVATO	94949	0.000218	0.000192	0.001855	0.001506	1.2E-06	8.73E-05	8.38E-05
20518	CITY OF NOVATO	1560 HILL ROAD	NOVATO	94947	0.000635	0.000558	0.007102	0.012073	2.75E-05	0.000673	0.000646
100222	CITY OF NOVATO	909 MACHIN AVE	NOVATO	94945	0.154746	0.154746					
109944	CITY OF NOVATO - CORPORATION YARD	550 DAVIDSON ST	NOVATO	94945	0.008698	0.008698					
110981	CITY OF SAN RAFAEL	111 MORPHEW ST	SAN RAFAEL	94901	0.017115	0.017115					
15148	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	111 MORPHEW STREET	SAN RAFAEL	94901	0.001474	0.001295	0.00087	0.009113	6.53E-06	0.000195	0.000187
17905	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	677 LINDARO STREET	SAN RAFAEL	94901	0.000629	0.000552	0.001226	0.011403	5.44E-06	0.000639	0.000614
17906	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	3780 KERNER BOULEVARD	SAN RAFAEL	94901	0.00142	0.001247	0.00372	0.017267	5.99E-06	0.000807	0.000774
17908	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	199 3RD STREET	SAN RAFAEL	94901	0.001933	0.001698	0.005066	0.023515	8.16E-06	0.001098	0.001055
17910	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	1400 5TH AVENUE	SAN RAFAEL	94901	0.010713	0.009412	0.028	0.129877	4.9E-05	0.006072	0.005829
17911	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	201 FRANCISCO BOULEVARD	SAN RAFAEL	94901	0.000289	0.000254	0.000728	0.008137	1.14E-05	7.76E-05	7.45E-05
21480	CLASSICAL PUBLIC RADIO NETWORK, LLC	200 SUNDIAL ROAD	SAUSALITO	94965	2.43E-05	2.13E-05	0.000201	0.000461	8.71E-07	2.49E-05	2.39E-05
106257	CLIPPER YACHT COMPANY LLC	310 HARBOR DR	SAUSALITO	94965	0.033537	0.033537					
23545	COLLIERS INTERNATIONAL	100 CORTE MADERA, TOWN CE	CORTE MADERA	94925	0.000164	0.000144	0.001146	0.004256	8.98E-06	0.000115	0.00011
15974	COMCAST CABLE	15 SAN MARIN	NOVATO	94945	0.000169	0.000148	0.00051	0.002347	1.09E-06	2.03E-05	1.95E-05
15958	COMCAST CABLE CORPORATION	1111 2ND STREET	SAN RAFAEL	94901	0.032339	0.02841	0.274884	0.223141	0.000178	0.012936	0.012418
19236	COUNTY OF MARIN	3260 KERNER BOULEVARD	SAN RAFAEL	94901	0.004039	0.003548	0.014256	0.076745	0.000175	0.002614	0.002509
100717	COUNTY OF MARIN	850 DRAKE AVE	SAUSALITO	94965	0.004187	0.004187					
18600	COUNTY OF MARIN SANTA VENETIA #5 PUMP STATION	825 VENDOLA DRIVE	SAN RAFAEL	94903	0.00236	0.002073	0.006383	0.029621	1.16E-05	0.000253	0.000243
19096	COUNTY OF MARIN STRAWBERRY CIRCLE PUMP STATION	117 E STRAWBERRY DRIVE	MILL VALLEY	94941	0.000134	0.000117	0.000633	0.002538	5.18E-06	9.14E-05	8.77E-05
106016	COUNTY OF MARIN - GENERAL SERVICES DEPT	#6 MEMORIAL DRIVE	SAN RAFAEL	94903	0.118361	0.118361					
22566	COUNTY OF MARIN C/O SARES REGIS	1600 LOS GAMOS DRIVE	SAN RAFAEL	94903	0.076222	0.048277	0.208815	0.943488	0.002793	0.053008	0.052609
17868	COUNTY OF MARIN, CIVIC CENTER	3501 CIVIC CENTER DR	SAN RAFAEL	94903	0.068364	0.033305	0.153487	0.876162	0.004546	0.024626	0.024567
18789	COUNTY OF MARIN, COVE PUMP STATION	#1 BLACKFIELD DRIVE	TIBURON	94920	0.000987	0.000867	0.006502	0.003796	5.44E-05	2.08E-05	2E-05
18996	COUNTY OF MARIN, DWP	816 PANORAMIC HIGHWAY	MILL VALLEY	94941	0.013341	0.001242	0.220797	0.093819	0.001085	0.000391	0.000391
18424	COUNTY OF MARIN, JUVENILE HALL	16 JEANNETTE PRANDI WAY	SAN RAFAEL	94903	0.000243	0.000213	0.002338	0.003982	8.16E-06	0.000232	0.000223
18705	COUNTY OF MARIN, MARIN CITY SUBSTATION	850 DRAKE AVE, MARIN CITY	SAUSALITO	94965	0.000262	0.00023	0.001059	0.00718	1.52E-05	0.000191	0.000183
19817	COUNTY OF MARIN, MER, BOLINAS	615 HORSESHOE HILL RD	BOLINAS	94924	0.000576	0.000506	0.000778	0.010051	1.14E-05	0.000325	0.000312
19865	COUNTY OF MARIN, MERA	1002 ROBERT DOLLR HLL	SAN RAFAEL	94901	4.48E-05	4.17E-06	0.00041	6.16E-05	0.000215	7.76E-05	7.76E-05
19862	COUNTY OF MARIN, MERA, FORBES HILL	END OF HEPBURN, HTS DR	SAN RAFAEL	94901	2.31E-05	2.15E-06	0.000367	5.73E-05	0.000229		
22628	COUNTY OF MARIN, MERA, PT REYES	SIR FRANCIS DRAK BLVD, MT TIBURON	POINT REYES STA	94956	5.09E-05	4.74E-06	0.01142	0.000356	0.000347	9.9E-05	9.9E-05
19896	COUNTY OF MARIN, MERA, TIBURON	99 1/2 MT TIBURON RD	TIBURON	94920	2.18E-05	2.03E-06	0.000347	1.09E-05	0.00023	8.28E-05	8.28E-05
19250	COUNTY OF MARIN, MT BARNABE	MOUNTAIN KING DRIVE	FOREST KNOLLS	94933	6.65E-05	6.20E-06	0.001085	0.000169	0.000678		
19611	COUNTY OF MARIN, NICASIO YARD	5600 NICASIO VALLEY RD	NICASIO	94946	0.017406	0.015291	0.144976	0.117756	8.54E-05	0.002678	0.002571
20734	COUNTY OF MARIN, PT REYES FIRE	101 4TH STREET	POINT REYES STA	94956	0.009225	0.000859	0.152672	0.064871	0.000417	0.00027	0.00027
18815	COUNTY OF MARIN, RYAN CREEK PUMP STATION	425 SYCAMORE AVENUE	MILL VALLEY	94941	0.000121	0.000106	0.001058	0.003332	1.59E-06	8.13E-05	7.81E-05
18662	COUNTY OF MARIN, S V #2	403 VENDOLA DRIVE	SAN RAFAEL	94903	0.004164	0.003658	0.012575	0.057841	8.94E-05	0.000826	0.000793
18611	COUNTY OF MARIN, S V #4 PUMP STATION	1565 VENDOLA DRIVE	SAN RAFAEL	94903	0.000881	8.20E-05	0.000137	0.001084	1.81E-07	3.19E-06	3.19E-06
15876	COUNTY OF MARIN, SAN VENETIA #1	609 VENDOLA DRIVE	SAN RAFAEL	94903	0.001831	0.001609	0.00553	0.025437	1.18E-05	0.000363	0.000349
18846	COUNTY OF MARIN, SHORELINE PUMP STATION	215 SHORELINE HIGHWAY	MILL VALLEY	94941	0.006431	0.000599	0.148527	0.088238	2.16E-06	0.000379	0.000379
18732	COUNTY OF MARIN,CARDINAL ROAD PUMP STATION	228 CARDINAL ROAD	MILL VALLEY	94941	0.004115	0.000383	4.87E-05	0.000423	3.22E-06	5.66E-05	5.66E-05
19872	COUNTY OF MARIN, MERA, SAN PEDRO	2099 BAYHILLS DRIVE	SAN RAFAEL	94903	0.001749	0.000163	0.011579	0.00369	0.000285	0.000103	0.000103
18530	COUNTY OF MARIN,S,V, #3 PUMP STATION	NEXT TO 79, VENDOLA DRIVE	SAN RAFAEL	94903	2.31E-05	2.03E-05	6.12E-05	0.000282	4.35E-07	4.02E-06	3.86E-06
111282	COUNTY OF MARIN-HICKS VALLEY FIRE DEPT	7330 RED HILL RD	PETALUMA	94952	0.000564	0.000564					



FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
20196	CPFB TENANT LLC/CAVALLO POINT LODGE	602 MURRAY CIR FORT BAKER	SAUSALITO	94965	0.002431	0.002135	0.007292	0.046185	8.95E-05	0.002188	0.0021
17022	CUSTOM BUILT CABINETS	20A PIMENTEL CT #11	NOVATO	94949	0.067693	0.064698					
23260	DELTA BUILDING SERVICES, INC	525 MESA ROAD	BOLINAS	94924	0.003583	0.003147	0.010819	0.049766	2.31E-05	0.000711	0.000682
23261	DELTA BUILDING SERVICES, INC	17000 SIR FRANCIS DRAK BOUL	POINT REYES STA	94956	0.001249	0.001097	0.010315	0.008381	8.71E-06	0.000191	0.000183
109826	DEPARTMENT OF TRANSPORTATION	40 SHORELINE HWY	MILL VALLEY	94941	0.001197	0.001197					
4229	DIANTHA'S COFFEE	91B LOUISE STREET	SAN RAFAEL	94901	0.001271	0.000847	0.006988	0.027998	0.000113	0.011452	0.00803
200293	DIXIE SCHOOL DISTRICT MAINTENANCE YARD	121 MARINWOOD AVE	SAN RAFAEL	94903	0.001248	0.001248					
21739	DRIVESAVERS, INC	400 BEL MARIN KEYS BLVD	NOVATO	94949	0.000746	6.95E-05	4.93E-05	1.46E-05	6.2E-07	1.65E-07	1.65E-07
11036	DUTRA MATERIALS/SAN RAFAEL ROC QUARRY INC	SAN PEDRO RD, MCNEARS QUA	SAN RAFAEL	94901	0.424725	0.35905	0.324483	1.300075	0.005268	19.30941	7.7241
14335	EMPORIO RULLI	26 RICH STREET	GREENBRAE	94904	0.000365	0.000178	0.003306	0.013247	5.37E-05	0.000733	0.000536
15081	EQUATOR COFFEES, LLC	115 JORDAN STREET	SAN RAFAEL	94901	0.013964	0.004998	0.080111	0.207303	0.000818	0.105458	0.07487
101939	EXPRESS - CHEVRON	170 MERRYDALE RD	SAN RAFAEL	94903	0.618984	0.618984					
21744	EXXONMOBIL OIL CORPORATION	1400 SO NOVATO BLVD	NOVATO	94947	0.071385	0.041066	0.075513	0.30255	0.001226	0.006473	0.006473
16219	FAIRCHILD SEMICONDUCTOR CORP C/O WEISS ASSO	4300 REDWOOD HIGHWAY	SAN RAFAEL	94903	0.000338	0.000287					
12481	FEDERAL AVIATION ADMINISTRATION	MT VISION ROAD	INVERNESS	94937	0.00015	0.000132	0.000327	0.002525	2.39E-06	0.000103	9.85E-05
14824	FEDERAL AVIATION ADMINISTRATION	SAUSALITO SAU VR	SAUSALITO	94965	0.000441	4.10E-05	0.007647	0.00325	1.09E-05	1.35E-05	1.35E-05
15949	FERNWOOD	301 TENNESSEE VALLEY RD	MILL VALLEY	94941	0.01505	0.004988	0.100264	0.323306	0.02692	0.030772	0.022759
21788	FIREMAN'S FUND INSURANCE COMPANY	777 SAN MARRIN DR	NOVATO	94998	0.003472	0.001694	0.016731	0.072934	0.0003	0.001919	0.001905
24006	FRONTIER CALIFORNIA INC	911 DIABLO AVENUE	NOVATO	94947	2.68E-07	2.35E-07	1.66E-06	4.64E-06	6E-09	1.16E-07	1.11E-07
16984	GARY MIGALE-PAINTING CONTRACTOR	33 HAMILTON DR, UNIT D	NOVATO	94949	0.048299	0.047715					
23726	GEARY-MARKET INVESTMENT, CO LTD	1000 4TH STREET	SAN RAFAEL	94901	0.024633	0.002293	0.001533	0.00909	1.01E-05	0.000178	0.000178
100311	GHILOTTI BROS	525 JACOBY ST	SAN RAFAEL	94901	0.021714	0.021714					
17592	GLOBAL POWER GROUP INC (TOYS 'R' US) - 5829	600 FRANCISCO BOULEVARD	SAN RAFAEL	94901	0.004655	0.000433	0.000724	0.005726	9.57E-07	1.68E-05	1.68E-05
19521	GOLD COAST PAINTING & FINISHING, INC	26B HAMILTON DRIVE	NOVATO	94949	0.041724	0.03426					
1793	GOLDEN GATE BRIDGE & TRANSIT DISTRICT	1011 ANDERSEN DRIVE	SAN RAFAEL	94901	0.037705	0.035717	0.025777	0.108438	0.000412	0.002205	0.002203
108806	GOLDEN GATE BRIDGE & TRANSPORTATION	1011 ANDERSEN DR	SAN RAFAEL	94901	0.009181	0.009181					
15595	GOLDEN GATE FERRY	101 E SIR FRANCIS DRAK BLVD	LARKSPUR	94939	0.010116	0.008887	0.085989	0.069803	5.55E-05	0.001517	0.001457
18399	GOLDEN GATE NTL RECREATION AREA	659 FORT BAKER STREET	SAUSALITO	94965	0.03548	0.003303	0.016986	0.049938	2.459713	0.00104	0.00104
18400	GOLDEN GATE NTL RECREATION AREA	840 FORT BARRY	SAUSALITO	94965	0.000655	0.000575	0.001666	0.006587	4.97E-06	0.000224	0.000215
21646	GUIDE DOGS FOR THE BLIND INC	350 LOS RANCHITOS ROAD	SAN RAFAEL	94903	0.004689	0.004119	0.028389	0.059376	0.000138	0.003545	0.003403
7456	HEADQUARTERS 23D MARINES	153 MADISON AVENUE	SAN RAFAEL	94903	0.004275	0.004061	0.105406	0.002699	0.000115	0.000176	0.000172
110576	HERC RENTALS	5750 PARADISE DR	CORTE MADERA	94925	0.000988	0.000988					
100290	INDIAN VALLEY GOLF CLUB	3035 NOVATO BLVD	NOVATO	94947	0.002013	0.002013					
17519	JB PIANO COMPANY	540 IRWIN STREET	SAN RAFAEL	94901	0.317683	0.257441					
12851	JERRY THOMPSON & SONS PAINTING INC	3 SIMMS STREET	SAN RAFAEL	94901	0.120814	0.113604	0.000183	0.000735	2.98E-06	1.57E-05	1.57E-05
23660	KAISER FOUNDATION HEALTH PLAN	1650 LOS GAMOS DRIVE	SAN RAFAEL	94903	0.000958	0.000842	0.00663	0.010939	2.09E-05	0.000658	0.000631
3947	KAISER PERMANENTE SAN RAFAEL MEDICAL CENTER	99 MONTECILLO ROAD	SAN RAFAEL	94903	0.009914	0.008658	0.031357	0.135483	0.000104	0.002286	0.002197
20220	KKMI SAUSALITO LLC	420 HARBOR DRIVE	SAUSALITO	94965	1.153368	1.143824					
16107	KLOBAS PAINTING COMPANY	50 TIBURON STREET, #16	SAN RAFAEL	94901	0.09951	0.098306					
20146	KOHL'S DEPARTMENT STORES - STORE 1379	5010 NORTHGATE MALL	SAN RAFAEL	94903	0.00102	0.000896	0.002759	0.012804	0.000005	0.000109	0.000105
111978	KUNST BROS PAINTING	76 BELVEDERE ST	SAN RAFAEL	94901	0.003095	0.003095					
4831	L P MCNEAR BRICK CO INC	MCNEAR POINT	SAN RAFAEL	94901	0.108212	0.047613	0.772864	3.096556	0.012548	4.046263	2.852258
1597	LAS GALLINAS VALLEY SANITARY DISTRICT	300 SMITH RANCH ROAD	SAN RAFAEL	94903	5.277327	1.431184	0.311702	0.82606	0.096685	0.019703	0.019542
5366	LAS GALLINAS VALLEY SANITARY DISTRICT	HAWTHORNE STREET	SAN RAFAEL	94903	0.003137	0.002661					
5367	LAS GALLINAS VALLEY SANITARY DISTRICT	MCPHAILS STREET	SAN RAFAEL	94903	0.007552	0.006406					
5368	LAS GALLINAS VALLEY SANITARY DISTRICT	ADRIAN WAY	SAN RAFAEL	94903	0.002487	0.00211					

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
16875	LAS GALLINAS VALLEY SANITARY DISTRICT	79 VENDOLA DRIVE	SAN RAFAEL	94903	0.000248	0.000218	0.00075	0.003451	1.6E-06	4.93E-05	4.73E-05
16876	LAS GALLINAS VALLEY SANITARY DISTRICT	403 VENDOLA DRIVE	SAN RAFAEL	94903	0.000629	0.000552	0.001898	0.008733	4.05E-06	0.000125	0.00012
19510	LAS GALLINAS VALLEY SANITARY DISTRICT	47 MEADOW DRIVE	SAN RAFAEL	94903	0.000194	0.00017	0.001676	0.003683	7.72E-06	0.000178	0.000171
20503	LAS GALLINAS VALLEY SANITARY DISTRICT	PUMP STA N CIVIC CENTER	SAN RAFAEL	94903	0.000352	0.000309	0.003421	0.006681	1.4E-05	0.000399	0.000383
20504	LAS GALLINAS VALLEY SANITARY DISTRICT	4238 REDWOD HWY FRNTG RD	SAN RAFAEL	94903	0.004868	0.004277	0.084386	0.0925	0.000178	0.004868	0.004674
22740	LAS GALLINAS VALLEY SANITARY DISTRICT	805 DESCANSO WAY, NEXT TO	SAN RAFAEL	94903	0.000235	0.000206	0.001766	0.003886	7.48E-06	0.000197	0.000189
110637	LEXUS OF MARIN ATTN: P TERREL	513 FRANCISCO BLVD E	SAN RAFAEL	94901	0.005104	0.005104					
15210	LUCAS RESIDENCE	60 PARK WAY	SAN ANSELMO	94960	0.001048	0.000921	0.002003	0.021787	1.93E-05	0.000387	0.000371
18350	LUCKY #732	1761 GRANT AVENUE	NOVATO	94947	0.002127	0.000198	0.000152	0.006688	3.8E-06	6.99E-05	6.69E-05
19472	MACERICH	5800 NORTHGATE MALL DR	SAN RAFAEL	94903	7.6E-05	6.68E-05	0.000657	0.001444	3.03E-06	6.99E-05	6.71E-05
16252	MACY'S WEST CORTE MADERA STORE #32 /MACY'S	1400 REDWOOD HIGHWAY	CORTE MADERA	94975	5.1E-05	4.48E-05	0.000138	0.000639	2.5E-07	5.46E-06	5.24E-06
16243	MACY'S WEST STORES, INC	1000 NORTHGATE	SAN RAFAEL	94903	0.002028	0.001782	0.006124	0.028169	1.31E-05	0.002097	0.002013
106390	MAGGIORA & GHILOTTI INC	555 DU BOIS ST	SAN RAFAEL	94901	0.006929	0.006929					
100380	MARCONI CONFERENCE CENTER	18500 STATE HIGHWAY 1	MARSHALL	94940	0.000309	0.000309					
112485	MARIN ACURA	5860 PARADISE DR	CORTE MADERA	94925	0.004639	0.004639					
7762	MARIN APPAREL COMPANY	7049 REDWOOD BLVD	NOVATO	94945	0.002502	0.002122				2.5E-05	2.4E-05
19466	MARIN BIOLOGIC LABORATORIES, INC	378 BEL MARIN KEYS BLVD	NOVATO	94949	0.000318	0.00028	0.001325	0.005322	9.4E-06	0.000201	0.000193
22434	MARIN COFFEE ROASTERS	1551 SO NOVATO BLVD	NOVATO	94945	0.000437	0.000106	0.003259	0.013057	5.29E-05	0.000262	0.000228
20965	MARIN COMMUNITY COLLEGE DISTRICT	835 COLLEGE AVENUE	KENTFIELD	94904	0.00056	0.000492	0.000835	0.007934	1.03E-05	0.000181	0.000174
200923	MARIN COMMUNITY COLLEGE DISTRICT	1800 IGNACIO BLVD	NOVATO	94949	0.000435	0.000382	0.007395	0.024856	3.41E-05	0.000435	0.000418
111522	MARIN COUNTRY CLUB	500 COUNTRY CLUB DR	NOVATO	94949	0.001393	0.001393					
111155	MARIN COUNTY PT REYES FIRE & SHERIFF	401 B STREET	POINT REYES STA	94956	0.002579	0.002579					
20954	MARIN FRENCH CHEESE CO	7500 RED HILL	PETALUMA	94952	0.021477	0.015411	0.051534	0.253516	2.544987	0.008103	0.008097
16931	MARIN FURNITURE CLINIC	68 WOODLAND AVENUE	SAN RAFAEL	94901	0.185468	0.183223					
1713	MARIN GENERAL HOSPITAL	250 BONAIR ROAD	GREENBRAE	94904	0.122613	0.064743	0.281909	1.564234	0.018942	0.047552	0.047344
22800	MARIN IT	366 BEL MARIN KEYS BLVD	NOVATO	94949	0.000221	0.000194	0.001859	0.003636	7.36E-06	0.000227	0.000218
15433	MARIN MUNICIPAL WATER DISTRICT	ROUND HILL RD & SPRING LN	TIBURON	94920	0.006811	0.005983	0.004436	0.041371	4.39E-05	0.000931	0.000894
15455	MARIN MUNICIPAL WATER DISTRICT	IGNACIO PMP STTN, BEHIND #1	NOVATO	94949	0.010681	0.009383	0.006356	0.078982	6.88E-05	0.001921	0.001844
21325	MARIN MUNICIPAL WATER DISTRICT	END OF SKY OAKS RD	FAIRFAX	94930	0.001068	0.000938	0.009367	0.035638	2.8E-05	0.001465	0.001406
21505	MARIN MUNICIPAL WATER DISTRICT	330 SAN GERONIMO, VALLEY D	WOODACRE	94973	0.087656	0.008161	1.450727	0.616425	0.002377	0.00257	0.00257
108408	MARIN MUNICIPAL WATER DISTRICT	49 SKY OAKS RD	FAIRFAX	94930	0.002616	0.002616					
108409	MARIN MUNICIPAL WATER DISTRICT	220 NELLEN AVE	CORTE MADERA	94925	0.103164	0.103164					
2111	MARIN SANITARY SERVICE	565 JACOBY STREET	SAN RAFAEL	94901						14.13294	13.56763
105997	MARIN SANITARY SERVICE	1050 ANDERSEN DR	SAN RAFAEL	94901	0.010782	0.010782					
17474	MARINA VILLAGE PUMP STATION	SAN CLEMENTE DRIVE	CORTE MADERA	94976	0.002332	0.002049	0.007043	0.032395	1.5E-05	0.000463	0.000444
2633	MARK CHEAVACCI CUSTOM CABINETRY & MILLWOR	20B PIMENTEL COURT	NOVATO	94947	0.323743	0.295472					
100991	MAXWELL B DREVER	2900 PARADISE DR	TIBURON	94920	0.000232	0.000232					
111184	MCEVOY RANCH	5935 REDHILL ROAD	PETALUMA	94952	0.000679	0.000679					
108559	MEADOW CLUB	1001 BOLINAS RD	FAIRFAX	94930	0.002476	0.002476					
100659	MORRIS ROOFING	1435 FRANCISCO BLVD E	SAN RAFAEL	94901	0.000825	0.000825					
7831	MOUNT TAMALPAIS CEMETERY AND MORTUARY	2500 5TH AVENUE	SAN RAFAEL	94901	0.00156	0.00074	0.011938	0.022883	4.87E-05	0.000461	0.0004
109688	MOUNT TAMALPAIS STATE PARK	801 PANORAMIC HWY	MILL VALLEY	94941	0.001931	0.001931					
109433	NATIONAL PARK SERVICE/GG NRA	FORT CRONKITE BLDG 1107	SAUSALITO	94965	0.000129	0.000129					
8762	NAVE MOTORS INC	1029 1ST STREET	NOVATO	94947	0.079059	0.069964					
1143	NAVY DOD HOUSING FACILITY NOVATO	BLDG 972 C STREET	NOVATO	94947						2.14E-06	1.5E-06
1430	NAZARETH HOUSE OF SAN RAFAEL	245 NOVA ALBION WAY	SAN RAFAEL	94903	0.000377	0.000331	0.002319	0.007161	1.42E-05	0.000348	0.000334



FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
16758	NEW CINGULAR WIRELESS,PCS,LLC DBA AT&T MOBIL	100 MESA ROAD	BOLINAS	94924	3.24E-05	3.02E-06	6.5E-06	2.59E-06	0.000116	0.000126	0.000126
16764	NEW CINGULAR WIRELESS,PCS,LLC DBA AT&T MOBIL	2001 E RIDGECREST BLVD	MILL VALLEY	94941	3.01E-05	2.80E-06	6.03E-06	2.4E-06	0.000108	0.000116	0.000116
201702	NFD - STATION 62	450 ATHERTON AVENUE	NOVATO	94945	0.003994	0.003509	0.010802	0.050127	1.96E-05	0.000428	0.000411
201704	NFD - STATION 64	319 ENFRENTE ROAD	NOVATO	94949	0.004509	0.003961	0.025173	0.101442	0.000206	0.004133	0.003968
100032	NICASIO CORPORATION YARD	5600 NICASIO VALLEY RD	NICASIO	94946	0.003558	0.003558					
21427	NORDSTROM STORE #423	1870 REDWOOD HIGHWAY	CORTE MADERA	94925	6.83E-05	6.00E-05	0.000306	0.001131	2.18E-06	3.84E-05	3.69E-05
19156	NORTH BAY REGIONAL SURGERY CTR	100 ROWLAND WAY	NOVATO	94945	0.000449	0.000394	0.001584	0.008528	1.94E-05	0.00029	0.000279
100530	NORTH MARIN WATER DIST ATTN: ROB CLARK	999 RUSH CREEK PL	NOVATO	94945	0.0037	0.0037					
15800	NORTH MARIN WATER DISTRICT	LANAI STREET & TAHITI	DILLON BEACH	94929	0.001952	0.000182	0.033878	0.014395	5.79E-05	6E-05	6E-05
16966	NORTHERN CALIFORNIA PRESBYTERIAN HOMES & SE	501 VIA CASITAS	GREENBRAE	94904	0.874379	0.081564	0.164867	0.394967	0.005957	0.105535	0.104895
106054	NOVATO BUILDERS SUPPLY	800 SWEETSER AVE	NOVATO	94945	0.001135	0.001135					
13763	NOVATO COMMUNITY HOSPITAL	180 ROWLAND WAY	NOVATO	94945	0.039995	0.025231	0.101169	0.528352	0.001737	0.01203	0.011892
17183	NOVATO FIRE DISTRICT	95 ROWLAND WAY	NOVATO	94945	0.031414	0.027597	0.042467	0.549181	0.000618	0.017791	0.017079
24548	NOVATO FIRE PROTECTION DISTRICT	65 SAN RAMON WAY	NOVATO	94947	0.006869	0.006035	0.018421	8.55E-05	1.41E-05	0.006322	0.006069
109639	NOVATO FIRE PROTECTION DISTRICT	7025 REDWOOD BLVD	NOVATO	94945	0.003746	0.003746					
1275	NOVATO SANITARY DISTRICT	500 DAVIDSON STREET	NOVATO	94947	4.253319	2.426893	0.517882	1.786621	0.422238	0.009771	0.009631
1276	NOVATO SANITARY DISTRICT	445 BEL MARIN KEYS BLVD	NOVATO	94947	2.47E-05	2.17E-05	0.000212	0.000924	4.65E-07	1.02E-05	9.78E-06
1277	NOVATO SANITARY DISTRICT	HWY 37 & NVTO CRK & ATHRT	NOVATO	94945	0.156612	0.117452					
13935	NOVATO SANITARY DISTRICT	3000 TOPAZ DRIVE	NOVATO	94945	0.001406	0.001235	0.004246	0.019531	9.05E-06	0.000279	0.000268
13936	NOVATO SANITARY DISTRICT	590 HAMILTON PKWY	NOVATO	94945	0.001523	0.001338	0.004598	0.021151	9.81E-06	0.000302	0.00029
16854	NOVATO SANITARY DISTRICT	891 BEL MARIN KEYS BLVD	NOVATO	94949	0.000864	0.000759	0.002608	0.011995	5.56E-06	0.000171	0.000164
17070	NOVATO SANITARY DISTRICT	438 BOLLING CIRCLE	NOVATO	94945	9.19E-05	8.07E-05	0.000366	0.001616	1.68E-06	9.29E-05	8.92E-05
3993	NOVATO UNIFIED SCHOOL DISTRICT	819 OLIVE AVENUE	NOVATO	94945	0.018762	0.018762					
19774	NOW & THEN ANTIQUES	23 PAMARON WAY	NOVATO	94945	0.014687	0.012412					
23009	NUGGET MARKET #14	1 BLACKFIELD DRIVE	TIBURON	94920	0.000326	3.03E-05	0.00011	1.65E-05	2.67E-07	5.54E-06	5.54E-06
109815	OLOMPALI STATE HISTORIC PARK	N HIGHWAY 101	NOVATO	94948	0.000194	0.000194					
13479	PACIFIC BELL	VISION ROAD	INVERNESS	94937	0.001758	0.001544	0.005308	0.024413	1.13E-05	0.000349	0.000335
13484	PACIFIC BELL	7 KING STREET	LARKSPUR	94939	0.00437	0.003839	0.036481	0.02963	1.89E-05	0.000674	0.000647
13525	PACIFIC BELL	360 SAN GERONMO VLLY	SAN GERONIMO	94963	0.001589	0.001396	0.004797	0.022066	1.02E-05	0.000315	0.000303
13540	PACIFIC BELL	220 SHAVER STREET	SAN RAFAEL	94901	0.064135	0.056342	0.193673	0.890857	0.000413	0.012723	0.012214
13547	PACIFIC BELL	28 ARENAL AVENUE	STINSON BEACH	94970	0.000335	0.000295	0.002699	0.004875	1.96E-05	9.68E-05	9.29E-05
13553	PACIFIC BELL	165 VALLEY AVENUE	TOMALES	94971	0.001622	0.001425	0.004899	0.022536	1.04E-05	0.000322	0.000309
14814	PACIFIC BELL	300 E BLITHEDALE AVENUE	MILL VALLEY	94941	0.039748	0.034919	0.120032	0.55212	0.000256	0.007885	0.00757
15071	PACIFIC BELL	414 TURNER STREET	SAUSALITO	94965	0.014906	0.013095	0.045012	0.207045	9.6E-05	0.002957	0.002839
15658	PACIFIC BELL/SBC ENVIRONMENTAL	350 ALAMEDA DEL PRDO ST	NOVATO	94949	0.00229	0.002011	0.003209	0.040138	3.67E-05	0.000953	0.000915
3031	PACIFIC GAS AND ELECTRIC COMPANY	1220 ANDERSON DRIVE	SAN RAFAEL	94901	0.281305	0.195439	0.014727	0.116456	1.95E-05	0.000342	0.000342
112464	PEACOCK GAP GOLF & COUNTRY CLUB	333 BISCAVNE DR	SAN RAFAEL	94901	0.000686	0.000686					
18990	PHOENIX AMERICAN INC	2401 KERNER BOULEVARD	SAN RAFAEL	94901	0.0006	0.000527	0.010161	0.011408	2.27E-05	0.000462	0.000443
15422	PINNACLE TOWERS INC	3838 LUCAS VALLEY RD	NICASIO	94946	0.000253	0.000223	0.000766	0.003521	1.63E-06	5.03E-05	4.83E-05
201120	PUMP STATION 13	70 BON AIR CTR	GREENBRAE	94904	0.000519	0.000456	0.002827	0.015606	3.47E-05	0.000471	0.000452
13397	RAFAEL TOWN CENTER	999 5TH AVENUE	SAN RAFAEL	94901	0.035876	0.00334	0.00558	0.044127	7.38E-06	0.00013	0.00013
1179	REDWOOD LANDFILL INC	8950 REDWOOD HWY	NOVATO	94945	5361.78	127.7577	40.68578	12.70533	24.48253	386.5012	97.90715
23831	RESIDENCE OF BOYD FELLOWS	15 SPRING ROAD	KENTFIELD	94904	0.233915	0.021777	0.026637	1.053155	0.000176	0.003116	0.003097
1360	RICH READIMIX CONCRETE, INC	101 RICH STREET	GREENBRAE	94904						2.076934	1.880934
22464	RISK BASED DECISIONS, INC	709 CENTER BOULEVARD	FAIRFAX	94930	0.00369	0.002578					
23101	ROBERT GIACOMINI DAIRY, INC	14700 CALIFORNIA 1	POINT REYES STA	94956	37.298	3.472444	32.91208	2.746216	2.54582	0.819149	0.819149

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
200979	ROSS VALLEY SANITARY DISTRICT	380 BON AIR CTR	GREENBRAE	94904	0.000169	0.000149	0.001477	0.003864	8.38E-06	0.000192	0.000184
22498	ROYAL GROUND	1146 4TH STREET	SAN RAFAEL	94901	0.069855	0.04877	0.380362	0.001443	5.85E-06	0.014037	0.009832
111880	SAFEWAY FUEL CENTER #2828	5700 NAVE DR	NOVATO	94949	0.154746	0.154746					
22850	SAFEWAY INC	110 STRWBRRY VLLG B1	MILL VALLEY	94941	0.001983	0.000185	0.000123	0.000732	8.15E-07	1.43E-05	1.43E-05
23122	SAFEWAY INC	1 CAMINO ALTO	MILL VALLEY	94941	0.004854	0.000452	5.95E-05	1.09E-05	3.89E-06	0.000178	0.000178
23702	SAFEWAY INC	900 DIABLO AVENUE	NOVATO	94947	0.011487	0.001069	0.001787	0.014128	2.36E-06	4.16E-05	4.16E-05
22831	SAFEWAY INC #1723	838 SIR FRANCIS DRAK	SAN ANSELMO	94960	0.00221	0.000206	0.001367	0.000783	1.55E-06	2.72E-05	2.72E-05
23200	SAFEWAY INC #2828	5720 NAVE DRIVE	NOVATO	94949	0.004985	0.000464	0.001089	0.00034	4.13E-06	3.73E-06	3.73E-06
22809	SAFEWAY INC #653	700 B STREET	SAN RAFAEL	94901	0.001127	0.000105	0.000697	0.000399	7.88E-07	1.39E-05	1.39E-05
109689	SAMUEL P. TAYLOR STATE PARK	SIR FRANCIS DRAK BLVD	LAGUNITAS	94938	0.003785	0.003785					
20315	SAN ANSELMO COFFEE ROASTERY	701 SAN ANSELMO AVENUE	SAN ANSELMO	94960	0.000107	2.61E-05	0.0023	0.002762	9.95E-06	3.85E-05	3.77E-05
201342	SAN ANSELMO POLICE DEPARTMENT	525 SAN ANSELMO AVE	SAN ANSELMO	94960	0.000248	0.000218	0.001987	0.004648	9.75E-06	0.000231	0.000221
100409	SAN GERONIMO GOLF COURSE	5800 SIR FRANCIS DRAK BLVD	SAN GERONIMO	94963	0.000516	0.000516					
4094	SAN QUENTIN STATE PRISON	CA STATE PRISON	SAN QUENTIN	94964	0.273925	0.267469	0.022635	0.10442	6.95E-05	0.001728	0.001632
106063	SAN RAFAEL ROCK QUARRY	PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.003778	0.003778					
16384	SAN RAFAEL SANITATION DISTRICT	575 PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.001671	0.001468	0.013796	0.011209	1.16E-05	0.000255	0.000245
16385	SAN RAFAEL SANITATION DISTRICT	301 RIVIERA DRIVE	SAN RAFAEL	94901	0.017432	0.015314	0.14817	0.120279	9.57E-05	0.006973	0.006694
16386	SAN RAFAEL SANITATION DISTRICT	905 PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.006672	0.005862	0.056714	0.046039	3.66E-05	0.002669	0.002562
21219	SAN RAFAEL SANITATION DISTRICT	47 CASTRO AVENUE	SAN RAFAEL	94901	0.000638	0.000561	0.004494	0.018483	9.58E-06	0.000355	0.000341
21247	SAN RAFAEL SANITATION DISTRICT	201 N FRNCSO BLVD EST	SAN RAFAEL	94901	0.004493	0.003947	0.043073	0.128463	6.86E-05	0.003125	0.003
21248	SAN RAFAEL SANITATION DISTRICT	86 WOODLAND AVENUE	SAN RAFAEL	94901	0.001274	0.001119	0.003376	0.015683	6.31E-06	0.001162	0.001115
21249	SAN RAFAEL SANITATION DISTRICT	48 MARINA BOULEVARD	SAN RAFAEL	94901	0.000381	0.000335	0.0066	0.017632	9.08E-06	0.00137	0.001315
201014	SAN RAFAEL SANITATION DISTRICT	MARINA AND PT. SAN PEDRO	SAN RAFAEL	94901	3.89E-05	3.41E-05	0.000808	0.001873	4.27E-06	7.77E-05	7.46E-05
1523	SANITARY DISTRICT #5 OF MARIN COUNTY	2001 PARADISE DRIVE	TIBURON	94920	0.683832	0.488824	0.03686	0.141202	0.00021	0.00355	0.003526
13806	SANITARY DISTRICT #5 OF MARIN COUNTY	2430 MAR EAST STREET	TIBURON	94920	0.013173	0.001226	0.002049	0.016202	2.71E-06	4.77E-05	4.77E-05
13807	SANITARY DISTRICT #5 OF MARIN COUNTY	2190 MAR EAST STREET	TIBURON	94920	0.026346	0.002453	0.004098	0.032405	5.42E-06	9.53E-05	9.53E-05
13809	SANITARY DISTRICT #5 OF MARIN COUNTY	SE CORNER, BEACH, AT TIBURO	TIBURON	94920	0.003777	0.000352	0.000587	0.004645	7.76E-07	1.37E-05	1.37E-05
13810	SANITARY DISTRICT #5 OF MARIN COUNTY	1155 TIBURON BLVD	TIBURON	94920	0.003449	0.000321	0.000536	0.004242	7.09E-07	1.25E-05	1.25E-05
13811	SANITARY DISTRICT #5 OF MARIN COUNTY	3700 PARADISE DRIVE	TIBURON	94920	0.000499	0.000438	0.011835	0.00097	1.24E-05	0.000335	0.000322
23998	SANITARY DISTRICT #5 OF MARIN COUNTY	COVE, RD PUMP STATION	TIBURON	94920	0.000922	8.58E-05	0.000143	0.001134	1.9E-07	3.34E-06	3.34E-06
23999	SANITARY DISTRICT #5 OF MARIN COUNTY	SEAFIRTH, PUMP STATION	TIBURON	94920	0.003161	0.000294	0.000492	0.000583	6.5E-07	1.14E-05	1.14E-05
22207	SANITARY DISTRICT #5 OF MARIN COUNTY (SD#5)	2420 MAR EAST ST, PS#2	TIBURON	94920	0.001607	0.00015	3.07E-05	8.1E-06	1.3E-06	1.32E-05	1.32E-05
13877	SANITARY DISTRICT NO 1 KENTFIELD PUMP STATION	CORTE MADERA CREEK PATHW	KENTFIELD	94904	0.002197	0.00193	0.009339	0.046145	4.04E-05	0.002472	0.002373
15738	SANITARY DISTRICT NO 1, LARKSPUR PUMP STATION	200 DOUGHERTY DRIVE	LARKSPUR	94939	0.00011	9.70E-05	0.000457	0.002098	2.81E-06	4.19E-05	4.02E-05
18067	SANITARY DISTRICT NO 2 OF MARIN COUNTY	5726 SAN CLEMENTE DRIVE	CORTE MADERA	94925	0.002983	0.00262	0.011988	0.099114	0.000113	0.003615	0.003471
22957	SANITARY DISTRICT NO 5 OF MARIN COUNTY	N SIDE-OF MAR WEST ST	TIBURON	94920	5.72E-05	5.02E-05	0.000929	0.000109	1.74E-06	3.99E-06	3.83E-06
17960	SANITARY DISTRICT NUMBER 1 P/S 10 MARIN COUN	101 E SIR FRANCIS DRAK BLVD	LARKSPUR	94939	0.00057	0.000501	0.009379	0.010862	2.16E-05	0.000468	0.000449
14891	SAUSALITO MARIN CITY SANITARY DISTRICT	FOOT OF MAIN STREET	SAUSALITO	94965	0.008901	0.007819	0.073495	0.059712	6.2E-05	0.001361	0.001306
14892	SAUSALITO MARIN CITY SANITARY DISTRICT	BRIDGEWAY & LOCUST ST	SAUSALITO	94965	0.00076	0.000668	0.002297	0.004714	4.9E-06	0.000151	0.000145
14894	SAUSALITO MARIN CITY SANITARY DISTRICT	180 DONAHUE STREET	SAUSALITO	94965	0.000253	0.000223	0.000766	0.003521	1.63E-06	5.03E-05	4.83E-05
2053	SAUSALITO-MARIN CITY SANITARY DISTRICT	#1 FORT BAKER ROAD	SAUSALITO	94965	8.111823	5.801986	0.607262	1.775539	0.23353	0.045588	0.04538
16951	SAUSALITO-MARIN CITY SANITARY DISTRICT	301 GATE FIVE ROAD	SAUSALITO	94965	0.000422	0.000371	0.001276	0.002898	2.72E-06	8.38E-05	8.05E-05
15237	SBC	101 KLEINERT WAY	TIBURON	94920	0.005053	0.004439	0.015259	0.070189	3.25E-05	0.001002	0.000962
21627	SEWAGE AGENCY OF S MARIN/CITY OF MILL VALLEY	655 REDWOOD HWY, FRONTAG	MILL VALLEY	94941	0.002725	0.000254	0.027945	6.64E-05	1.13E-06	1.98E-05	1.98E-05
13425	SEWERAGE AGENCY OF S MARIN/CITY OF MILL VALLE	6000 SHELTER BAY AVENUE	MILL VALLEY	94941	0.000735	6.84E-05	0.000432	7.29E-05	6.07E-07	1.07E-05	1.07E-05
1345	SEWERAGE AGENCY OF SOUTH MARIN	450 SYCAMORE AVENUE	MILL VALLEY	94941	0.577956	0.417569	0.067226	0.308643	0.004029	0.004424	0.004249

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
14723	SEWERAGE AGENCY OF SOUTHERN MARIN	ALMONTE BLVD & ROSEMONT	MILL VALLEY	94941	0.001114	0.000978	0.003363	0.006904	7.17E-06	0.000221	0.000212
14724	SEWERAGE AGENCY OF SOUTHERN MARIN	CAMINO ALTO AVE & MILLER A	MILL VALLEY	94941	0.000213	0.000187	0.000643	0.002958	1.37E-06	4.22E-05	4.06E-05
14725	SEWERAGE AGENCY OF SOUTHERN MARIN	MILLAND DR & SEMINARY DR	MILL VALLEY	94941	0.001068	0.000939	0.008822	0.007167	7.45E-06	0.000163	0.000157
14726	SEWERAGE AGENCY OF SOUTHERN MARIN	500 TIBURON BLVD	TIBURON	94920	0.000528	0.000464	0.005863	0.005695	1.18E-05	0.000279	0.000268
14727	SEWERAGE AGENCY OF SOUTHERN MARIN	BAYVIEW & TIBURON BLVD	TIBURON	94920	0.001396	0.001226	0.004215	0.01939	8.99E-06	0.000277	0.000266
200600	SEWERAGE AGENCY OF SOUTHERN MARIN	138 LOMITA DR	MILL VALLEY	94941	0.000615	0.000541	0.002924	0.011739	2.4E-05	0.00048	0.000461
24187	SHIMMICK/DANNY'S JOINT VENTURE	5702 CONZELMAN STREET	MILL VALLEY	94941	0.046236	0.040618	0.018692	0.186917	0.00945	0.047051	0.045169
112006	SHINEOLOGY @ SECOND STREET	1515 2ND ST	SAN RAFAEL	94901	0.109391	0.109391					
109946	SKYWALKER PROPERTIES	5858 LUCAS VALLEY RD	NICASIO	94946	0.001834	0.001834					
100467	STINSON BEACH FIRE PROTECTION DIST	3499 HWY 1	STINSON BEACH	94970	0.000552	0.000552					
100736	STONE TREE GOLF CLUB	1410 RENAISSANCE RD	NOVATO	94945	0.001618	0.001618					
111945	STRAWBERRY CHEVRON MINI MART	580 REDWOOD HWY FRONTAG	MILL VALLEY	94941	0.661767	0.661767					
15446	TAMALPAIS COMMUNITY SERVICES DISTRICT	305 BELL LANE	MILL VALLEY	94941	0.00251	0.002205	0.005512	0.040636	5.45E-05	0.001285	0.001233
109257	TAMALPAIS COMMUNITY SERVICES DISTRICT	305 BELL LN	MILL VALLEY	94941	0.001388	0.001388					
19699	TAMALPAIS UNION HIGH SCHOOL DISTRICT (REDWO	395 DOHERTY DRIVE	LARKSPUR	94939	3.33E-05	2.93E-05	0.000289	0.000549	1.09E-06	2.86E-05	2.74E-05
15851	TARGET CORPORATION- STORE T-692	200 VINTAGE WAY	NOVATO	94945	0.003462	0.000322	7.55E-06	1.57E-05	1.4E-06	4.77E-05	4.77E-05
21764	TARGET STORE T2772	125 SHORELINE PARKWAY	SAN RAFAEL	94901	0.004798	0.000447	0.002511	0.000229	3.75E-06	0.00013	0.00013
18860	THE COFFEE ROASTERY	4 BOLINAS ROAD	FAIRFAX	94930	0.000219	0.000113	0.001917	0.002304	8.3E-06	5.19E-05	4.53E-05
10200	THE HOME DEPOT (STORE #0657)	111 SHORELINE PARKWAY	SAN RAFAEL	94901	0.000494	0.000434	0.00357	0.009392	2.02E-05	0.000494	0.000475
22568	THE MARINE MAMMAL CENTER	2000 BUNKER RD FORT CRONK	SAUSALITO	94965	0.000784	0.000689	0.013273	0.014902	2.96E-05	0.000603	0.000579
22066	THE PASHA GROUP	4040 CIVIC CENTER	SAN RAFAEL	94903	4.28E-05	3.76E-05	0.000285	0.001101	2.1E-06	3.14E-05	3.01E-05
22734	TIBURON FIRE PROTECTION DISTRICT	1679 TIBURON BLVD	TIBURON	94920	0.003161	0.002777	0.008548	0.039671	1.55E-05	0.000338	0.000325
18649	TJ BUILT CONSTRUCTION, INC	701 DE LONG AVE, UNIT A	NOVATO	94945	0.014714	0.011771					
18955	TOM & DAVE'S SPECIALTY COFFEES	3095 KERNER BLVD, SUITE A	SAN RAFAEL	94901	0.000886	0.000501	0.004405	0.007725	3.13E-05	0.000627	0.000465
109916	TOMALES BAY ST	PIERCE POINT ROAD	INVERNESS	94937	0.000635	0.000635					
111805	TOMALES FIRE STATION	599 DILLON BCH ROAD	TOMALES	94971	0.000193	0.000193					
109667	TOWN OF FAIRFAX	142 BOLINAS RD	FAIRFAX	94930	0.002907	0.002907					
100684	TOWN OF SAN ANSELMO	550 SAN FRANCISCO BLVD	SAN ANSELMO	94960	0.000455	0.000455					
100558	TOWN OF TIBURON	1175 TIBURON BLVD	TIBURON	94920	0.003058	0.003058					
20839	TWIN CITIES POLICE DEPARTMENT	250 DOHNERTY DRIVE	LARKSPUR	94939	0.190977	0.167773	0.000388	0.00209	4.76E-06	7.77E-05	7.46E-05
8267	US COAST GUARD	HANGAR #2, HAMILTON FIELD	NOVATO	94949						0.000625	0.000438
15329	US COAST GUARD STATION GOLDEN GATE	E FORT BAKER	SAUSALITO	94965	0.00164	0.001441	0.004436	0.010098	8.03E-06	0.000176	0.000169
16466	US TELEPACIFIC COMMUNICATIONS	1009 E STREET	SAN RAFAEL	94901	0.000388	0.000341	0.001171	0.005387	2.5E-06	7.69E-05	7.39E-05
100565	VALENTINE CORPORATION	111 PELICAN WAY	SAN RAFAEL	94901	0.001505	0.001505					
4209	VALLEY MEMORIAL PARK	650 BUGEIA LANE	NOVATO	94945	0.021042	0.0147	0.181625	0.264862	0.121866	0.064944	0.04588
17046	VERIZON WIRELESS	8950 REDWOOD HIGHWAY	SAN RAFAEL	94915	0.000386	0.000339	0.00075	0.0051	5.55E-06	9.41E-05	9.04E-05
20464	VERIZON WIRELESS 'SAN RAFAEL'	1000 ROBERT DOLLAR DR	SAN RAFAEL	94901	0.000728	0.000639	0.001691	0.006096	1.25E-05	0.000304	0.000292
18959	VERIZON WIRELESS (BOLINAS)	100 MESA DRIVE	BOLINAS	94924	0.000817	0.000718	0.005985	0.013731	2.33E-05	0.000774	0.000743
17087	VERIZON WIRELESS (CORTE MADERA)	417 SUMMIT DRIVE	CORTE MADERA	94925	0.004001	0.000372	0.00364	1.17E-05	1.55E-06	4.57E-05	4.57E-05
18742	VERIZON WIRELESS (HAMILTON AFB)	HMLTN AFB DD HSN	NOVATO	94949	0.000199	0.000175	0.000623	0.003789	4.58E-06	0.00015	0.000144
19660	VERIZON WIRELESS (LITTLE MOUNTAIN)	3055 NOVATO BLVD	NOVATO	94947	0.000319	0.00028	0.002642	0.006053	1.14E-05	0.000326	0.000313
19873	VERIZON WIRELESS (MARINWOOD)	1 SAINT VINCENTS DRIVE	SAN RAFAEL	94903	6.42E-05	5.64E-05	0.000838	0.003356	5.44E-06	0.000164	0.000158
17375	VERIZON WIRELESS (NEILS ISLAND)	10300 REDWOOD HWY	NOVATO	94947	0.00075	0.000659	0.001503	0.009901	1.08E-05	0.000183	0.000175
17442	VERIZON WIRELESS (NICASIO)	3431 NICASIO VALLEY RD	NICASIO	94946	0.000719	0.000631	0.003647	0.012593	1.38E-05	0.000682	0.000655
17099	VERIZON WIRELESS (NOVATO)	END OF ROBINHOOD DR	NOVATO	94947	0.002285	0.002007	0.00714	0.043408	5.26E-05	0.001713	0.001645
20191	VERIZON WIRELESS (PARADISE DRIVE)	5768 PARADISE DRIVE	CORTE MADERA	94925	3.45E-05	3.03E-05	4.58E-05	0.001833	2.83E-06	8.98E-05	8.62E-05

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
18532	VERIZON WIRELESS (PEACOCK GAP)	333 BISCAYNE DRIVE	SAN RAFAEL	94901	0.000771	0.000678	0.005649	0.012961	2.2E-05	0.00073	0.000701
18569	VERIZON WIRELESS (SAN GERONIMO)	1 MOUNTAIN KING ROAD	LAGUNITAS	94938	0.000568	0.000499	0.004707	0.010785	2.04E-05	0.000581	0.000558
17388	VERIZON WIRELESS (SAN RAFAEL)	END OF CHLA VSTA DRIVE	SAN RAFAEL	94901	0.001295	0.001138	0.002597	0.017101	1.86E-05	0.000316	0.000303
15147	VERIZON WIRELESS (SKYWALKER RANCH)	3800 LUCAS VALLEY RD	NICASIO	94946	0.002582	0.002268	0.006982	0.032401	1.26E-05	0.000276	0.000265
20396	VERIZON WIRELESS (TAMALPAIS HOMSTEAD VALLEY)	700 DONAHUE STREET	SAUSALITO	94965	0.000213	0.000187	0.001766	0.004046	7.65E-06	0.000218	0.000209
19290	VERIZON WIRELESS (TOMALES)	28375 SHORELINE HWY	TOMALES	94971	0.000129	0.000114	0.001073	0.002458	4.65E-06	0.000133	0.000127
17096	VERIZON WIRELESS (WALDO TUNNEL)	300 SPENCER AVENUE	SAUSALITO	94965	0.026069	0.002427	0.004055	0.032064	5.36E-06	9.43E-05	9.43E-05
16722	VILLA MARIN HOMEOWNERS ASSOCIATION	100 THORNDALE DRIVE	SAN RAFAEL	94903	0.003515	0.003088	0.010615	0.048827	2.26E-05	0.000697	0.000669
22938	VISUAL CONCEPTS ENTERTAINMENT	850 HANGAR AVENUE	NOVATO	94949	0.035621	0.031293	0.065965	0.6768	0.000971	0.011874	0.011399
13757	W BRADLEY ELECTRIC INC	90 HILL ROAD	NOVATO	94945	0.000849	0.000746	0.002297	0.010658	4.16E-06	9.09E-05	8.73E-05
1443	WEILAND INDUSTRIES, INC	34 DELUCA PLACE, BLDG K	SAN RAFAEL	94901						0.000579	0.000405
20322	WILD CARD ROASTERS LLC	40 LOUISE STREET	SAN RAFAEL	94901	0.002358	0.000759	0.016283	0.034218	0.000124	0.002288	0.001798
108069	WOODLANDS GAS & MART	1 KENT AVE	KENTFIELD	94904	0.936115	0.936115					
3235	ZAPPETINI, INC	1112 2ND STREET	SAN RAFAEL	94901	0.045002	0.045002					

**Sheet 1: Marin County Housing and Safety Element EIR Projections**

	<b>HSEU 2019</b>	<b>CAP 2020 Projection</b>	<b>CAP 2030 Projection</b>	<b>CAP 2040 Projection</b>	<b>HSEU 2040</b>	<b>GP Change</b>
Population	66,888	71,660	73,490	75,190	90,170	23,282
Households	29,818	27,960	28,500	28,425	40,811	10,993
Jobs	19,817	20,690	21,315	21,645	18,208	-1,609
Jobs: Agriculture and Natural Resource	335	335	330	325	273	-62
Service Population	86,705	92,350	94,805	96,835	108,379	21,674

**Notes:**

HSEU Population, household, and jobs developed by MIG, Inc.

Agricultural jobs for HSEU obtained from County 2030 CAP; 2040 HSEU assumed agricultural jobs would scale linearly with ag jobs

**Sheet 2: Greenhouse Gas Emissions Summary**

**Table 1: Comparison of 2019 to 2040 GHG Emissions by Sector (Unmitigated)**

Sector	GHG Emissions (MTCO2e)		
	2019 (Existing)	2040 Forecast (Unmitigated)	Difference
Built Environment - Electricity	25,697	3,079	-22,618
Built Environment - Natural Gas	94,939	110,157	15,218
Transportation	255,601	228,898	-26,703
Off-road Vehicles and Equipment	4,263	3,730	-534
Waste	18,421	23,026	4,605
Water	111	139	28
Wastewater	1,813	2,443	631
Agriculture	121,645	99,277	-22,368
Total	522,490	470,749	-51,741
MTCO2e per capita	7.8	5.2	-2.6
Mobile MTCO2e per Capita	3.8	2.5	-1.3

**Table 2: Comparison of 2019 to 2040 GHG Emissions by Sector (Mitigated)**

Sector	GHG Emissions (MTCO2e)		
	2019 (Existing)	2040 Forecast (Mitigated)	Difference
Built Environment - Electricity	25,697	3,079	-22,618
Built Environment - Natural Gas	94,939	93,178	-1,760
Transportation	255,601	228,898	-26,703
Off-road Vehicles and Equipment	4,263	3,730	-534
Waste	18,421	23,026	4,605
Water	111	139	28
Wastewater	1,813	2,443	631
Agriculture	121,645	99,277	-22,368
Total	522,490	453,770	-68,719
MTCO2e per capita	7.8	5.0	-2.8
Mobile MTCO2e per Capita	3.8	2.5	-1.3

Sheet 3: 2019 EIR Inventory GHG Emissions (Existing Conditions)

Table 1: Activity Rates for Existing Land Uses (2019 Inventory)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	6,601.60	7.80686E-05	MTCO2e per kW. See Sheet 6.	2030 CAP
Non-residential Electricity (kW)	Per Job	6,676.67			2030 CAP
Residential Natural Gas (Therm)	Per Household	445.46	0.00531865	MTCO2e per Therm	2030 CAP
Non-residential Natural Gas (Therm)	Per Job	205.77			2030 CAP
Residential Stationary Combustion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP
Transportation	Per VMT	See Sheet 7.	0.00040446	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	3.029602401	0.0089125	MTCO2e per Gal Gasoline	2030 CAP
Off-road (Gallons of Diesel)	Per Service Population	1.50454585	0.01029514	MTCO2e per Gal Diesel	2030 CAP
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.76557864	0.0089125	MTCO2e per Ag Job	2030 CAP
Agriculture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.17804154	0.01029514	MTCO2e per Ag Job	2030 CAP

Table 2: 2019 Inventory Energy and GHG Emissions Estimation

Emissions / Energy Source	Energy	GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,525.84	15,367.53
Non-residential Electricity (kW)	132,311,547.85	10,329.38
Residential Natural Gas (Therm)	13,282,687.57	70,645.97
Non-residential Natural Gas (Therm)	4,077,741.92	21,688.08
Residential Stationary Combustion (Gal of Propane)	461,409.19	2,604.79
Transportation	Calc Sep	255,601.12
Off-road Gasoline (Gallons)	262,681.68	2,341.15
Off-road Diesel (Gallons)	130,451.65	1,343.02
Wastewater	--	1,812.56
Waste	--	18,421.23
Water	--	111.27
Agriculture (Land management / Ag Job)	--	121,644.76
Agriculture (Gal of Gasoline)	30,071.47	268.01
Agriculture (Gal of Diesel)	30,209.64	311.01
	Total	522,489.88
	GHG per Capita	7.8

**Table 3: Sum of Energy and Emissions by Sector**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity	329,158,073.69	25,697
Built Environment - Natural Gas	17,360,429.49	94,939
Transportation	See Sheet 7.	255,601
Off-road Vehicles and Equipment	453,414.44	4,263
Waste	--	18,421
Water	--	111
Wastewater	--	1,813
Agriculture	--	121,645
Total	--	522,490
	GHG per Capita	7.8
	Mobile Source per Capita	3.8



Sheet 4: Unmitigated 2040 EIR Forecast GHG Emissions

Table 1: Activity Rates for New Development (2040 Forecast; Unmitigated)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate (MTCO2e)	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	951.00		MTCO2e per kW. Assumes PG&E meets 60% RPS target, improves upon it's 2019 renewable mix. See Sheet 6.	CAP pg B-55
Non-residential Electricity (kW)	Per Job	2,301.10	9.36286E-06		CAP pg B-56
Residential Natural Gas (Therm)	Per Household	290.39	0.00531865	MTCO2e per therm	CAP pg B-55
Non-residential Natural Gas (Therm)	Per Job	88.58			CAP pg B-56
Residential Stationary Combusion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP; Held Constant
Transportation	Per VMT	See Sheet 7.	0.000271502	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	2.12	0.0089125	MTCO2e per Gal Gasoline	CAP pg B-17; removes portable landscape equipment CARB SORE
Off-road (Gallons of Diesel)	Per Service Population	1.50	0.01029514	MTCO2e per Gal Diesel	2030 CAP; Held Constant
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP; Held Constant
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP; Held Constant
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP; Held Constant
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.77	0.0089125	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriulture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.18	0.01029514	MTCO2e per Ag Job	2030 CAP; Held Constant

Table 2: Energy and GHG Emissions Estimation (2040 Forecast; Unmitigated)

Emissions / Energy Source	2019 Energy	2040 Incremental Growth Energy	Sum of Energy	2019 LU Emissions (MTCO2e)	2040 Incremental Growth GHG Emissions	Sum of GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,525.84	10,454,343.00	207,300,868.84	1,843.05	97.88	1,940.93
Non-residential Electricity (kW)	132,311,547.85	(10,739,711.35)	121,571,836.51	1,238.81	(100.55)	1,138.26
Residential Natural Gas (Therm)	13,282,687.57	3,192,280.98	16,474,968.55	70,645.97	16,978.63	87,624.59
Non-residential Natural Gas (Therm)	4,077,741.92	(330,989.79)	3,746,752.13	21,688.08	(1,760.42)	19,927.66
Residential Stationary Combusion (Gal of Propane)	461,409.19	-	-	2,604.79	-	2,604.79
Transportation	See Sheet 7.			228,898		228,897.97
Off-road Gasoline (Gallons)	-	-	229,514.71	2,046		2,045.55
Off-road Diesel (Gallons)	-	-	163,060.98	1,679		1,678.74
Wastewater	-	-	-	2,443		2,443.47
Waste	-	-	-	23,026		23,026.03
Water	-	-	-	139		139.08
Agriculture (Land management / Ag Job)	-	-	-	99,277		99,276.74
Agriculture (Gal of Gasoline)			24,541.93	2		2.44
Agriulture (Gal of Diesel)			24,654.70	3		2.81
	Total					470,749.06
	GHG per Capita					5.2

Note: Assumes existing (2019) land uses will continue to consume electricity and natural gas in the same quantities in 2040 as 2019.

**Table 3: Sum of Energy and Emissions by Sector (2040 Forecast; Unmitigated)**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity (kW)	328,872,705.34	3,079
Built Environment - Natural Gas (Therm)	20,221,720.68	110,157
Transportation	See Sheet 7.	228,898
Off-road Vehicles and Equipment	441,772.32	3,730
Waste	--	23,026
Water	--	139
Wastewater	--	2,443
Agriculture	--	99,277
Total	--	470,749
	MTCO2e per Capita	5.2
	Mobile MTCO2e per Capita	2.5

Sheet 5: Mitigated 2040 EIR Forecast GHG Emissions

Table 1: Activity Rates for New Development (2040 Forecast; Mitigated)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate (MTCO2e)	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	951.00		MTCO2e per kW. Assumes PG&E meets 60% RPS target, improves upon it's 2019 renewable mix. See Sheet 6.	CAP pg B-55
Non-residential Electricity (kW)	Per Job	2,301.10	9.36286E-06		CAP pg B-56
Residential Natural Gas (Therm)	Per Household	0.00	0.00531865	MTCO2e per therm	CAP pg B-55
Non-residential Natural Gas (Therm)	Per Job	88.58			CAP pg B-56
Residential Stationary Combusion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP; Held Constant
Transportation	Per VMT	See Sheet 7.	0.000271502	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	2.12	0.0089125	MTCO2e per Gal Gasoline	CAP pg B-17; removes portable landscape equipment CARB SORE
Off-road (Gallons of Diesel)	Per Service Population	1.50	0.01029514	MTCO2e per Gal Diesel	2030 CAP; Held Constant
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP; Held Constant
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP; Held Constant
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP; Held Constant
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.77	0.0089125	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriulture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.18	0.01029514	MTCO2e per Ag Job	2030 CAP; Held Constant

Table 2: Energy and GHG Emissions Estimation (2040 Forecast; Mitigated)

Emissions / Energy Source	2019 Energy	2040 Incremental Growth Energy	Sum of Energy	2019 LU Emissions (MTCO2e)	2040 Incremental Growth GHG Emissions	Sum of GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,526	10,454,343	207,300,869	1,843	98	1,941
Non-residential Electricity (kW)	132,311,548	-10,739,711	121,571,837	1,239	-101	1,138
Residential Natural Gas (Therm)	13,282,688	0	13,282,688	70,646	0	70,646
Non-residential Natural Gas (Therm)	4,077,742	-330,990	3,746,752	21,688	-1,760	19,928
Residential Stationary Combusion (Gal of Propane)	461,409	0	0	2,605	0	2,605
Transportation	See Sheet 7.			228,898		228,898
Off-road Gasoline (Gallons)	0	0	229,515	2,046		2,046
Off-road Diesel (Gallons)	0	0	163,061	1,679		1,679
Wastewater	0	0	0	2,443		2,443
Waste	0	0	0	23,026		23,026
Water	0	0	0	139		139
Agriculture (Land management / Ag Job)	0	0	0	99,277		99,277
Agriculture (Gal of Gasoline)			24,542	2		2
Agriulture (Gal of Diesel)			24,655	3		3
	Total					453,770.44
	GHG per Capita					5.0

Note: Assumes existing (2019) land uses will continue to consume electricity and natural gas in the same quantities in 2040 as 2019.

**Table 3: Sum of Energy and Emissions by Sector (2040 Forecast; Mitigated)**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity (kW)	328,872,705.34	3,079
Built Environment - Natural Gas (Therm)	17,029,439.70	93,178
Transportation	See Sheet 7.	228,898
Off-road Vehicles and Equipment	441,772.32	3,730
Waste	--	23,026
Water	--	139
Wastewater	--	2,443
Agriculture	--	99,277
Total	--	453,770
	MTCO2e per Capita	5.0
	Mobile MTCO2e per Capita	2.5

Sheet 6: EIR Greenhouse Gas Intensity Factors for Consumed Electricity

Table 1: Electricity Emissions Factors, 2019

Supplier	MT / kWh			
	CO2	CH4	N2O	CO2e
PG&E	0.00000122	0.00000001	0.00000000	0.00000212
MCE	0.00008846	0.00000001	0.00000000	0.00008936
Direct Access	--	--	--	0.0002101
Weighted	--	--	--	7.80686E-05

Notes: PG&E had a renewable mix of 31.7% in 2019 per the PG&E 2021 Corporate Sustainability Report

Table 2: Electricity Emissions Factors, 2040

Supplier	MT / kWh			
	CO2	CH4	N2O	CO2e
PG&E	7.11935E-07	0.00000001	0.00000000	1.61E-06
MCE	--	--	--	0.00000000
Direct Access	--	--	--	0.00012987
Weighted	--	--	--	9.36E-06

Weighted average is based on 2018 electricity load distribution as follows:

PG&E	23%
MCE	71%
Other Direct Access	7%

Sheet 7: Energy and Mobile Source Consumption Comparison Tables

Table 1: Estimated Operational Change in Vehicle Fuel Consumption (2019 vs. 2040)

Metric	VMT and Vehicle Fuel Consumption - Kittleson				
	2019	2040 NP	2040 HEU	Change 2019 and 2040 HEU	Change 2040 NP and 2040 HEU
Total Diesel VMT	82,983	57,469	75,401	-7,582	17,931
Total Gasoline VMT	1,686,929	1,575,906	2,067,618	380,689	491,713
Total Electric VMT	51,287	218,448	286,608	235,321	68,160
Total VMT (miles/day)	1,821,199	1,851,823	2,429,627	608,428	577,804
Diesel Fuel Efficiency (miles/gal)	10.19	10.58	10.58	0.39	0
Gasoline Fuel Efficiency (miles/gal)	22.64	30.83	30.83	8.20	0
Electric Fuel Efficiency (miles per kWh)	2.68	2.12	2.12	-0.56	0
Total Diesel Consumption (Gallons/yr)	2,825,813	1,885,124	2,473,319	-352,494	588,195
Total Gasoline Consumption (Gallons/yr)	25,859,547	17,736,058	23,270,045	-2,589,502	5,533,987
Total Electricity Consumption (kWh/yr)	6,647,137	35,728,934	46,877,041	40,229,903	11,148,107
Total Petroleum Consumption (Gallons/yr)	28,685,360	19,621,182	25,743,364	-2,941,996	6,122,182
Service Population (SP)	86,705	86,705	108,379	21,674	21,674
Fuel Consumption Efficiency (Gallons/yr/SP)	330.84	226.30	237.53	-93.31	11.23

Table 2: Greenhouse Gas Global Warming Potentials (5 AR)

Pollutant	CO2	CH4	N2O
Greenhouse Gas	1	28	265

Table 3: GHG Emissions per VMT

Year	GHG per VMT			
	CO2	CH4	N2O	CO2e
Short tons				
2019	4.39E-04	2.72E-08	2.43E-08	4.46E-04
2040	2.96E-04	9.08E-09	1.28E-08	2.99E-04
Metric Tons				
2019	0.000397934	2.47138E-08	2.20147E-08	0.00040446
2040	0.000268204	8.23854E-09	1.15762E-08	0.00027150

Table 4: Electricity Consumption

Metric	MWh		
	2019 Existing	2040 Project	Change
Residential Electricity Consumption	196,847	207,301	10,454
Non-Residential Electricity Consumption	132,312	121,572	-10,740
Total Electricity	329,158	328,873	-285
Service Population	86,705	108,379	21,674
MWh/SP	3.80	3.03	-0.76

**Table 5: Natural Gas Consumption**

Metric	Thousand therms		
	2019 Existing	2040 Project	Change
Residential Natural Gas Consumption	13,283	13,282,688	13,269,405
Non-Residential Natural Gas Consumption	4,078	3,746,752	3,742,674
Total Natural Gas	17,360	17,029,440	17,012,079
Service Population	86,705	108,379	21,674
Therm/SP	0.20	157.13	156.93

FORECAST

Plan Bay Area Projections 2040

	2015	2018	2020	2030	2040	2050
Population	70,795	71,314	71,660	73,490	75,190	72,502
Countywide Population	262,420	264,493	265,875	274,530	282,670	272,566
Households	27,615	27,822	27,960	28,500	28,425	27,409
Countywide Households	106,790	107,633	108,195	111,065	111,585	107,597
Jobs	20,560	20,638	20,690	21,315	21,645	20,871
Jobs: Agriculture and Natural Resource	340	337	335	330	325	313
Countywide Jobs	129,565	129,766	129,900	133,480	134,960	130,136
Household Population	64,600	65,041	65,335	66,870	68,265	65,825
Household Size	2.37	2.37	2.37	2.38	2.44	2.40

Note: 2018 data is interpolated

<http://projections.planbayarea.org/>

Plan Bay Area only forecast to 2040. For 2050 estimates, the 2040-2050 Marin County population growth from the CA Department of Finance, Table P-1: State Population Projections (2010-2060), baseline 2019, is applied to unincorporated population, households, and jobs.

Marin County Annual VMT Forecasts for 2020, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2020	289,803,640	12,888,703	1,767,976	304,460,318
Years compounded				3
Compound Annual Growth Rate 2017-2020				0.05%
Percent change 2018 to 2020				0.15%

\* 2020 bus VMT assumes same VMT as in 2019

Marin County Annual VMT Forecasts for 2030, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2030	303,994,722	13,125,127	1,767,976	318,887,825
Years compounded				12
Compound Annual Growth Rate				0.40%
Percent change 2018 to 2030				4.90%

\* 2030 bus VMT assumes same VMT as in 2019

Marin County Annual VMT Forecasts for 2040, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2040	297,511,437	13,696,843	1,767,976	312,976,255
Years compounded				22
Compound Annual Growth Rate				0.13%
Percent change 2018 to 2040				2.68%



\* 2040 bus VMT assumes same VMT as in 2019

**Emission Factors, 2020**

PG&E electricity	0.0000945 MTCO <sub>2</sub> e/kWh
MCE electricity <sup>1</sup>	0.0000253 MTCO <sub>2</sub> e/kWh
DA electricity	0.0002101 MTCO <sub>2</sub> e/kWh
Electricity, weighted average <sup>2</sup>	0.0000537 MTCO <sub>2</sub> e/kWh
Residential electricity, weighted average <sup>3</sup>	0.0000437 MTCO <sub>2</sub> e/kWh
Natural Gas	0.0053187 MTCO <sub>2</sub> e/therm
Gasoline/off-road	0.0089125 MTCO <sub>2</sub> /gallon
Diesel/off-road	0.0102951 MTCO <sub>2</sub> /gallon
Transportation coefficient	0.0003658 MTCO <sub>2</sub> e/mile
Passenger vehicle coefficient	0.0003268 MTCO <sub>2</sub> e/mile
Commercial vehicle coefficient	0.0011212 MTCO <sub>2</sub> e/mile
Bus coefficient	0.0012512 MTCO <sub>2</sub> e/mile

<sup>1</sup>The MCE 2019 Resource Integration Plan states that MCE electricity is projected to be 94% GHG-free in 2020 and 100% GHG-free by 2022. We have conservatively estimated a future GHG emission factor by assuming the remainder will be system power using the current emission factor set by CARB of 929.5 lbs CO<sub>2</sub>/MWh (eGrid 2018).

<sup>2</sup>Weighted average is based on 2018 electricity load distribution as follows:

PG&E	22.53%
MCE	70.54%
Other Direct Access	6.93%

<sup>3</sup> Residential weighted average is based on 2018 load distribution as follows:

PG&E	26.6%
MCE	73.4%

**Emission Factors, 2030**

PG&E electricity	0.0000927 MTCO <sub>2</sub> e/kWh
MCE electricity	0.0000000 MTCO <sub>2</sub> e/kWh
DA electricity	0.0001299 MTCO <sub>2</sub> e/kWh
Electricity, weighted average	0.0000299 MTCO <sub>2</sub> e/kWh
Residential electricity, weighted average	0.0000247 MTCO <sub>2</sub> e/kWh
Natural Gas	0.0053187 MTCO <sub>2</sub> e/therm
Gasoline/off-road	0.0089125 MTCO <sub>2</sub> /gallon
Diesel/off-road	0.0102951 MTCO <sub>2</sub> /gallon
Transportation coefficient	0.0002916 MTCO <sub>2</sub> e/mile
Passenger vehicle coefficient	0.0002577 MTCO <sub>2</sub> e/mile
Commercial vehicle coefficient	0.0009485 MTCO <sub>2</sub> e/mile
Bus coefficient	0.0012512 MTCO <sub>2</sub> e/mile



REFERENCE SHEET

*Emission Factors 2018*

Source	Unit	Emission Factor	Source
PG&E electricity	MTCO <sub>2</sub> e/kWh	0.0000945	PG&E & eGrid
MCE electricity (light green)	MTCO <sub>2</sub> e/kWh	0.0000585	MCE & eGrid
MCE electricity (light & deep green)	MTCO <sub>2</sub> e/kWh	0.0000481	GHG Inventory
Other direct access electricity	MTCO <sub>2</sub> e/kWh	0.0002261	eGrid 2018 Summary Tables for WECC California
Residential electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000605	2018 GHG Inventory
Commercial electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000848	2018 GHG Inventory
Electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000709	2018 GHG Inventory
Electricity grid loss factor		1.0480000	eGrid 2018 Summary Tables for WECC California
Natural gas	MTCO <sub>2</sub> e/therm	0.0053187	2010 LGOP, Tables G.1 and G.3
Gasoline	MTCO <sub>2</sub> e/gallon	0.0089125	LGOP, May 2010, Version 1.1, Tables G.11 and G.14
Diesel	MTCO <sub>2</sub> e/gallon	0.0102951	LGOP, May 2010, Version 1.1, Tables G.11 and G.14
Rail diesel	MTCO <sub>2</sub> e/gallon	0.0102100	CO2 emission factors from U.S. Community Protocol v. 1.1 Table TR.1.6. CH4 and N2O emission factors from LGOP Table G.1:
Renewable diesel	MTCO <sub>2</sub> e/gallon	0.0041860	NEXGEN Fuel <a href="http://www.nexgenfuel.com/fleets-commercial-use/">http://www.nexgenfuel.com/fleets-commercial-use/</a>
Transportation coefficient	MTCO <sub>2</sub> e/mile	0.0003863	Calculation
Passenger car coefficient	MTCO <sub>2</sub> e/mile	0.0003459	EMFAC 2017
Commercial vehicle coefficient	MTCO <sub>2</sub> e/mile	0.0011483	EMFAC 2017
Bus coefficient	MTCO <sub>2</sub> e/mile	0.0012512	Calculation
Landfilled waste coefficient	MTCO <sub>2</sub> e/ton	0.2844639	GHG Inventory
ADC waste coefficient	MTCO <sub>2</sub> e/ton	0.0707196	GHG Inventory
Water coefficient - all sources	MTCO <sub>2</sub> e/MG	0.0471753	GHG Inventory
Wastewater treatment coefficient	MTCO <sub>2</sub> e/person	0.0142074	GHG Inventory

*Unincorporated Statistics*

	2018	2020	2030	2040	2050	Source
Population	71,314	71,660	73,490	75,190	72,502	ABAG
Households	27,822	27,960	28,500	28,425	27,409	ABAG
Jobs	20,638	20,690	21,315	21,645	20,871	ABAG
Service Population (population + employees)	91,952	92,350	94,805	96,835	93,374	Calculation
Area in the County - square miles land area	828.0	828.0	828.0	828.0	828.0	Wikipedia
Density (ppl. per sq. mile)	86	87	89	91	88	Calculation
Average Household Size	2.37	2.37	2.38	2.44	2.40	ABAG

**Community-Wide GHG Emissions**

	2018 MTCO <sub>2</sub> e	2020 BAU MTCO <sub>2</sub> e	2030 BAU MTCO <sub>2</sub> e	2040 BAU MTCO <sub>2</sub> e	2050 BAU MTCO <sub>2</sub> e	Source
Residential	79,802	80,198	81,747	81,532	78,617	2018 Greenhouse Gas Inventory
Commercial	34,321	34,407	35,447	35,996	34,709	
Transportation	117,767	117,263	122,444	120,857	116,538	
Off-Road	4,471	4,506	4,593	4,580	4,417	
Wastewater	1,933	1,941	1,993	2,036	1,963	
Waste	19,536	19,621	20,142	20,573	19,838	
Water	118	119	122	124	120	
Agriculture	122,371	121,645	119,829	118,014	113,795	
TOTAL	380,319	379,699	386,316	383,712	369,997	
Emissions per service population	4.14	4.11	4.07	3.96		
Emissions per resident	5.33	5.30	5.26	5.10		Calculation
Emissions per household	13.67	13.58	13.55	13.50		Calculation
Residential emissions per household	2.87	2.87	2.87	2.87		Calculation
Commercial emissions per job	1.66	1.66	1.66	1.66		Calculation

Energy Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Residential electricity (kWh) inc. grid loss	183,669,731	11,108	184,580,752	11,163	188,145,616	11,379
Residential natural gas (therms)	12,393,552	65,917	12,455,025	66,244	12,695,573	67,523
Residential stationary combustion (gallons propane)	491,914	2,777	494,354	2,791	503,902	2,845
Commercial electricity (kWh) inc. grid loss	137,793,093	6,651	138,140,280	6,668	142,313,198	6,869
Commercial natural gas (therms)	4,246,679	22,587	4,257,379	22,644	4,385,985	23,328
Total residential and commercial electricity (kWh)	321,462,824	17,759	322,721,032	17,831	330,458,814	18,248
Total community natural gas use (therms)	16,640,231	88,504	16,712,404	88,887	17,081,558	90,851
Average household electricity use (kWh)	6,602	0.4	6,602	0.6	6,602	0.4
Average household natural gas use (therms)	445	2.4	445	2.4	445	2.4

Transportation Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Passenger Vehicles (VMT)	288,941,452	99,953	289,803,640	100,251	303,994,722	105,160
Commercial Vehicles (VMT)	13,297,860	15,270	12,888,703	14,800	13,125,127	15,071
Bus (VMT)	1,754,911	2,196	1,767,976	2,212	1,767,976	2,212
SMART Train		348		403		403
Off-Road Gasoline - Construction & Landscape (gallons)	278,578	2,483	279,960	2,495	286,782	2,556
Off-Road Diesel - Construction & Landscape (gallons)	138,346	1,424	139,032	1,431	142,420	1,466

Waste Detail	2018 (tons)	2018 MTCO <sub>2</sub> e	2020 BAU (tons)	2020 BAU MTCO <sub>2</sub> e	2030 BAU (tons)	2030 BAU MTCO <sub>2</sub> e
Landfilled Waste	65,987	18,771	66,273	18,852	68,034	19,353
Landfilled Sludge (subset of above)	308		310		318	
ADC	10,817	765	10,864	768	11,153	789
Total	76,804	19,536	77,136	19,620	79,187	20,142

Wastewater Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Process emissions	n/a	876	n/a	880	n/a	903
Electricity use	n/a	137	n/a	138	n/a	141
Septic system emissions	n/a	919	n/a	919	n/a	919

Water Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Water use (million gallons)	2,501	118	2,512	119	2,579	122

Agriculture Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Manure Management	n/a	53,068	n/a	52,753	n/a	51,966
Enteric Fermentation	n/a	68,896	n/a	68,487	n/a	67,465
Fertilizer Application	n/a	407	n/a	405	n/a	399
Off-road vehicles & equipment - diesel (gallons)	30,390	313	30,210	311	29,759	306
Off-road vehicles & equipment - gasoline (gallons)	30,251	270	30,071	268	29,623	264

---

*Government Operations GHG Emissions*

---

Buildings & Facilities Energy Detail		MTCO <sub>2</sub> e
Total electricity (kWh)	13,649,989	#REF!
Total natural gas (therms)	379,454	2,018.2

Public Lighting Energy Detail	kWh	MTCO <sub>2</sub> e
Streetlights	380,758	0.0
Streetlights - Parks & Open Space	8,209	0.0
Traffic Control Signals	41,321	0.0
Total electricity (kWh)	430,288	0.0

Vehicle Fleet Detail		MTCO <sub>2</sub> e
All departments (gallons diesel)	125,404	1,291.1
All departments (gallons gasoline)	255,707	2,279.0

Global Warming Potential:

AR5, 100 year

CO <sub>2</sub>	1
CH <sub>4</sub>	28
N <sub>2</sub> O	265

1 and G.14.

Sheet 10: Average Fuel Efficiency - Marin County  
 EMFAC2021 Marin County Fuel Efficiency Estimates for 2019 and 2040

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	3.61	101.76	33.20	3.07
LDA	115,795.76	3,698,617.54	134,093.22	27.58
LDT1	14,779.56	429,679.11	18,349.74	23.42
LDT2	57,459.81	1,987,532.83	89,784.66	22.14
LHDT1	4,330.11	147,853.77	16,810.12	8.80
LHDT2	539.31	18,355.13	2,337.66	7.85
MCY	6,591.51	36,613.98	920.95	39.76
MDV	28,181.72	911,683.20	50,279.91	18.13
MH	564.54	4,601.48	1,046.43	4.40
MHDT	473.69	20,658.44	4,648.10	4.44
OBUS	147.25	8,022.47	1,721.21	4.66
SBUS	60.80	3,025.43	325.62	9.29
UBUS	53.50	5,590.74	917.96	6.09
TOTAL	228,981.16	7,272,335.87	321,268.79	22.64

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	766.73	81060.66	15093.62	5.37
LDA	1145.96	34303.40	828.35	41.41
LDT1	12.36	126.49	5.25	24.12
LDT2	419.65	15835.19	529.21	29.92
LHDT1	2557.93	90026.31	5741.89	15.68
LHDT2	794.12	30576.65	2409.79	12.69
MCY	0.00	0.00	0.00	0.00
MDV	869.09	32239.62	1391.07	23.18
MH	242.19	2563.37	272.78	9.40
MHDT	1529.33	59065.98	7346.33	8.04
OBUS	44.02	3132.04	468.92	6.68
SBUS	101.69	2328.73	293.76	7.93
UBUS	53.50	6481.42	725.81	8.93
TOTAL	8536.57	357739.84	35106.79	10.19

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Energy Consumption (kWh/day)	Miles Per kWh
HHDT	0.00	0.00	0.00	0.00
LDA	7,157.39	215,908.22	80,825.25	2.67
LDT1	40.83	1,130.30	436.10	2.59
LDT2	100.47	2,349.97	772.99	3.04
LHDT1	0.00	0.00	0.00	0.00
LHDT2	0.00	0.00	0.00	0.00
MCY	0.00	0.00	0.00	0.00
MDV	86.35	1,686.43	509.72	3.31
MH	0.00	0.00	0.00	0.00
MHDT	0.00	0.00	0.00	0.00
OBUS	0.00	0.00	0.00	0.00
SBUS	0.00	0.00	0.00	0.00
UBUS	1.01	21.42	37.35	0.57
TOTAL	7,386.05	221,096.34	82,581.40	2.68

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	0.27	31.98	6.87	4.66
LDA	104,780.43	3,426,225.96	92,692.90	36.96
LDT1	8,232.45	250,776.55	7,989.88	31.39
LDT2	63,879.74	2,088,893.47	68,335.39	30.57
LHDT1	3,201.58	107,753.86	9,759.70	11.04
LHDT2	372.13	12,335.80	1,256.34	9.82
MCY	6,288.13	33,128.30	772.21	42.90
MDV	36,289.56	1,155,972.57	45,830.53	25.22
MH	336.35	3,574.97	808.29	4.42
MHDT	213.62	9,735.84	1,818.04	5.36
OBUS	63.96	1,941.71	366.53	5.30
SBUS	42.44	2,152.50	204.77	10.51
UBUS	33.83	2,940.77	291.15	10.10
TOTAL	223,734.49	7,095,464.27	230,132.61	30.83

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	825.37	82766.22	11805.71	7.01
LDA	121.07	2816.78	55.08	51.14
LDT1	0.08	2.68	0.09	29.85
LDT2	265.55	8374.93	214.41	39.06
LHDT1	2067.84	69190.61	4173.33	16.58
LHDT2	960.74	31605.18	2229.46	14.18
MCY	0.00	0.00	0.00	0.00
MDV	484.62	14143.17	480.48	29.44
MH	250.22	2223.47	237.95	9.34
MHDT	1141.27	42365.29	4621.37	9.17
OBUS	49.51	3242.15	430.86	7.52
SBUS	71.83	1516.25	172.58	8.79
UBUS	5.23	506.62	38.93	13.01
TOTAL	6243.34	258753.33	24460.26	10.58

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Energy Consumption (kWh/day)	Miles Per kWh
HHDT	229.97	17,739.52	32,951.12	0.54
LDA	18,122.62	626,430.62	233,835.68	2.68
LDT1	319.82	10,458.48	3,783.59	2.76
LDT2	3,592.31	90,491.16	32,295.71	2.80
LHDT1	2,053.73	96,173.32	63,013.95	1.53
LHDT2	512.47	23,170.76	14,941.00	1.55
MCY	0.00	0.00	0.00	0.00
MDV	2,868.99	73,100.63	26,620.31	2.75
MH	0.00	0.00	0.00	0.00
MHDT	700.76	34,339.85	37,591.98	0.91
OBUS	18.84	1,325.15	1,468.06	0.90
SBUS	40.81	1,308.60	1,378.55	0.95
UBUS	71.96	9,016.29	15,717.59	0.57
TOTAL	28,532.29	983,554.37	463,597.54	2.12

Sheet 11: Raw EMFAC2021 Output for 2019 - Marin County

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Marin

Calendar Year: 2019

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	NOx_RUNE	NOx_IDLEX	NOx_STRE	NOx_TOTE	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_TO
Marin	2019	HHDT	Aggregate	Aggregate	Gasoline	3.608755	101.7573	101.7573	0	72.20398	0	0.002746	0	1.43E-05	0.00276	1.15E-06	0	4.76E-07	1.63E-06
Marin	2019	HHDT	Aggregate	Aggregate	Diesel	766.7314	81060.66	81060.66	0	9467.818	0	0.472624	0.053584	0.018209	0.544417	0.007465	0.000144	0	0.007609
Marin	2019	HHDT	Aggregate	Aggregate	Natural Gas	62.53211	4531.263	4531.263	0	419.0193	0	0.0116	0.000821	0	0.012421	1.55E-05	7.1E-07	0	1.62E-05
Marin	2019	LDA	Aggregate	Aggregate	Gasoline	114176.8	3663281	3663281	0	528732.6	0	0.362762	0	0.211202	0.573964	0.005778	0	0.001402	0.00718
Marin	2019	LDA	Aggregate	Aggregate	Diesel	1145.964	34303.4	34303.4	0	5133.511	0	0.011925	0	0	0.011925	0.000846	0	0	0.000846
Marin	2019	LDA	Aggregate	Aggregate	Electricity	5538.385	185770.7	0	185770.7	28093.59	71722.82006	0	0	0	0	0	0	0	0
Marin	2019	LDA	Aggregate	Aggregate	Plug-in Hyb	1619.002	65474.53	35337.01	30137.52	6694.572	9102.430275	0.000248	0	0.000865	0.001113	6.19E-05	0	1.91E-05	8.11E-05
Marin	2019	LDT1	Aggregate	Aggregate	Gasoline	14779.38	429675	429675	0	65292.84	0	0.108885	0	0.040342	0.149226	0.001103	0	0.000278	0.001382
Marin	2019	LDT1	Aggregate	Aggregate	Diesel	12.36271	126.4891	126.4891	0	38.66985	0	0.000231	0	0	0.000231	3.36E-05	0	0	3.36E-05
Marin	2019	LDT1	Aggregate	Aggregate	Electricity	40.65499	1126.844	0	1126.844	194.2634	435.0546719	0	0	0	0	0	0	0	0
Marin	2019	LDT1	Aggregate	Aggregate	Plug-in Hyb	0.177749	7.535852	4.083464	3.452388	0.734992	1.042723932	2.87E-08	0	9.5E-08	1.24E-07	8.17E-09	0	2.45E-09	1.06E-08
Marin	2019	LDT2	Aggregate	Aggregate	Gasoline	57383.44	1985721	1985721	0	270681	0	0.254049	0	0.14217	0.396219	0.003104	0	0.000671	0.003775
Marin	2019	LDT2	Aggregate	Aggregate	Diesel	419.6518	15835.19	15835.19	0	2050.235	0	0.001058	0	0	0.001058	8.73E-05	0	0	8.73E-05
Marin	2019	LDT2	Aggregate	Aggregate	Electricity	24.11044	752.2193	0	752.2193	119.1531	290.4187382	0	0	0	0	0	0	0	0
Marin	2019	LDT2	Aggregate	Aggregate	Plug-in Hyb	76.36368	3409.891	1812.14	1597.751	315.7638	482.5685492	1.27E-05	0	4.08E-05	5.35E-05	3.59E-06	0	1.05E-06	4.64E-06
Marin	2019	LHDT1	Aggregate	Aggregate	Gasoline	4330.111	147853.8	147853.8	0	64512.2	0	0.056091	0.000196	0.051711	0.107998	0.000347	0	3.7E-05	0.000384
Marin	2019	LHDT1	Aggregate	Aggregate	Diesel	2557.927	90026.31	90026.31	0	32175.5	0	0.308653	0.006968	0	0.31562	0.005911	8.09E-05	0	0.005991
Marin	2019	LHDT2	Aggregate	Aggregate	Gasoline	539.3061	18355.13	18355.13	0	8034.858	0	0.006691	2.45E-05	0.006364	0.01308	3.63E-05	0	3.31E-06	3.96E-05
Marin	2019	LHDT2	Aggregate	Aggregate	Diesel	794.1212	30576.65	30576.65	0	9989.045	0	0.070186	0.002108	0	0.072294	0.001488	2.38E-05	0	0.001512
Marin	2019	MCY	Aggregate	Aggregate	Gasoline	6591.511	36613.98	36613.98	0	13183.02	0	0.028964	0	0.002757	0.031722	8E-05	0	7E-05	0.00015
Marin	2019	MDV	Aggregate	Aggregate	Gasoline	28181.72	911683.2	911683.2	0	130452.3	0	0.20345	0	0.096088	0.299539	0.001542	0	0.000378	0.00192
Marin	2019	MDV	Aggregate	Aggregate	Diesel	869.0858	32239.62	32239.62	0	4239.355	0	0.002707	0	0	0.002707	0.000221	0	0	0.000221
Marin	2019	MDV	Aggregate	Aggregate	Electricity	0.191017	4.343293	0	4.343293	0.841689	1.676869425	0	0	0	0	0	0	0	0
Marin	2019	MDV	Aggregate	Aggregate	Plug-in Hyb	86.15501	3658.735	1976.644	1682.091	356.251	508.0416516	1.39E-05	0	4.6E-05	5.99E-05	3.97E-06	0	1.19E-06	5.17E-06
Marin	2019	MH	Aggregate	Aggregate	Gasoline	564.544	4601.476	4601.476	0	56.47698	0	0.004108	0	2.42E-05	0.004132	1.4E-05	0	5.76E-08	1.41E-05
Marin	2019	MH	Aggregate	Aggregate	Diesel	242.1874	2563.366	2563.366	0	24.21874	0	0.011924	0	0	0.011924	0.000298	0	0	0.000298
Marin	2019	MHDT	Aggregate	Aggregate	Gasoline	473.6899	20658.44	20658.44	0	9477.588	0	0.027467	4.55E-05	0.005158	0.032671	4.18E-05	0	1.22E-05	5.39E-05
Marin	2019	MHDT	Aggregate	Aggregate	Diesel	1529.334	59065.98	59065.98	0	16942.73	0	0.329301	0.05193	0.013987	0.395218	0.008971	0.000385	0	0.009356
Marin	2019	MHDT	Aggregate	Aggregate	Natural Gas	12.73429	669.9389	669.9389	0	109.5569	0	0.000122	9.52E-05	0	0.000217	7.61E-07	2.33E-07	0	9.95E-07
Marin	2019	OBUS	Aggregate	Aggregate	Gasoline	147.2468	8022.468	8022.468	0	2946.115	0	0.004844	1.06E-05	0.001366	0.006221	7.5E-06	0	1.13E-06	8.63E-06
Marin	2019	OBUS	Aggregate	Aggregate	Diesel	44.0202	3132.037	3132.037	0	542.4141	0	0.021425	0.001388	0.000512	0.023325	0.000731	9.21E-06	0	0.00074
Marin	2019	OBUS	Aggregate	Aggregate	Natural Gas	0.016043	1.18401	1.18401	0	0.142781	0	3.93E-07	2.8E-08	0	4.21E-07	6.98E-10	4.96E-11	0	7.48E-10
Marin	2019	SBUS	Aggregate	Aggregate	Gasoline	60.80401	3025.432	3025.432	0	243.216	0	0.006309	5.92E-05	0.000172	0.00654	1.88E-05	0	7.96E-07	1.96E-05
Marin	2019	SBUS	Aggregate	Aggregate	Diesel	101.6908	2328.729	2328.729	0	1472.482	0	0.016474	0.003403	0.000478	0.020356	8.72E-05	4.09E-06	0	9.13E-05



Marin	2019 SBUS	Aggregate	Aggregate	Natural Gas	2.836836	72.68698	72.68698	0	41.07738	0	4.91E-05	1.65E-05	0	6.56E-05	2.71E-07	3.42E-08	0	3.05E-07
Marin	2019 UBUS	Aggregate	Aggregate	Gasoline	53.49562	5590.742	5590.742	0	213.9825	0	0.000859	0	0.000184	0.001043	4.78E-06	0	6.56E-08	4.85E-06
Marin	2019 UBUS	Aggregate	Aggregate	Diesel	53.49562	6481.416	6481.416	0	213.9825	0	0.010059	0	0	0.010059	4.54E-05	0	0	4.54E-05
Marin	2019 UBUS	Aggregate	Aggregate	Electricity	1.009351	21.4248	0	21.4248	4.037406	37.34864797	0	0	0	0	0	0	0	0

PM2.5_PM	PM2.5_PM	PM2.5_TO	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TOT	PM10_PM	PM10_PMI	PM10_TOT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLEX	CH4_STRE	CH4_TOTE	N2O_RUNE	N2O_IDLEX	N2O_STRE
5.61E-07	4.58E-06	6.78E-06	1.23E-06	0	5.02E-07	1.73E-06	2.24E-06	1.31E-05	1.71E-05	0.30606	0	0.008457	0.314517	7.87E-05	0	0	7.87E-05	6.23E-05	0	2.95E-07
0.000784	0.002821	0.011214	0.007802	0.000151	0	0.007953	0.003135	0.00806	0.019148	160.6254	8.492129	0	169.1176	0.000598	0.000166	0	0.000764	0.025284	0.001337	0
4.5E-05	0.00029	0.000351	1.68E-05	7.72E-07	0	1.76E-05	0.00018	0.000828	0.001026	7.836186	0.584669	0	8.420855	0.02064	0.002029	0	0.02267	0.001597	0.000119	0
0.008076	0.009631	0.024887	0.006283	0	0.001524	0.007808	0.032305	0.027517	0.06763	1213.632	0	45.88066	1259.513	0.018606	0	0.059763	0.07837	0.030032	0	0.022288
7.56E-05	9E-05	0.001012	0.000884	0	0	0.000884	0.000303	0.000257	0.001444	9.281328	0	0	9.281328	6.2E-05	0	0	6.2E-05	0.001461	0	0
0.00041	0.000313	0.000722	0	0	0	0	0.001638	0.000893	0.002531	0	0	0	0	0	0	0	0	0	0	0
0.000144	9.31E-05	0.000318	6.74E-05	0	2.08E-05	8.82E-05	0.000577	0.000266	0.000931	10.39041	0	0.5078	10.89821	3.22E-05	0	0.000319	0.000351	4.46E-05	0	0.000155
0.000947	0.001363	0.003692	0.0012	0	0.000303	0.001502	0.003789	0.003893	0.009185	166.755	0	7.09075	173.8457	0.005022	0	0.011398	0.01642	0.007048	0	0.003321
2.79E-07	4.63E-07	3.43E-05	3.51E-05	0	0	3.51E-05	1.12E-06	1.32E-06	3.76E-05	0.058769	0	0	0.058769	2.06E-06	0	0	2.06E-06	9.25E-06	0	0
2.48E-06	1.91E-06	4.4E-06	0	0	0	0	9.94E-06	5.46E-06	1.54E-05	0	0	0	0	0	0	0	0	0	0	0
1.66E-08	1.07E-08	3.79E-08	8.88E-09	0	2.67E-09	1.15E-08	6.65E-08	3.06E-08	1.09E-07	0.001201	0	6.38E-05	0.001265	3.75E-09	0	3.52E-08	3.9E-08	5.21E-09	0	1.73E-08
0.004378	0.006016	0.014168	0.003375	0	0.00073	0.004105	0.017511	0.017188	0.038804	820.9744	0	29.09158	850.0659	0.009132	0	0.032067	0.041198	0.018296	0	0.013289
3.49E-05	4.69E-05	0.000169	9.12E-05	0	0	9.12E-05	0.00014	0.000134	0.000365	5.929597	0	0	5.929597	1.06E-05	0	0	1.06E-05	0.000933	0	0
1.66E-06	1.27E-06	2.92E-06	0	0	0	0	6.63E-06	3.62E-06	1.03E-05	0	0	0	0	0	0	0	0	0	0	0
7.52E-06	4.85E-06	1.7E-05	3.91E-06	0	1.14E-06	5.04E-06	3.01E-05	1.38E-05	4.9E-05	0.532936	0	0.028787	0.561723	1.67E-06	0	1.52E-05	1.69E-05	2.33E-06	0	7.47E-06
0.000326	0.004449	0.005159	0.000377	0	4.01E-05	0.000417	0.001304	0.012713	0.014433	156.8403	0.590169	1.830096	159.2605	0.002728	0.000583	0.003005	0.006316	0.003039	1.44E-05	0.003808
0.000298	0.002709	0.008998	0.006178	8.46E-05	0	0.006262	0.001191	0.00774	0.015194	63.94112	0.394342	0	64.33546	0.001225	1.44E-05	0	0.001239	0.010065	6.21E-05	0
4.05E-05	0.000644	0.000725	3.95E-05	0	3.59E-06	4.31E-05	0.000162	0.001841	0.002046	21.82687	0.084936	0.235366	22.14717	0.000275	7.39E-05	0.000354	0.000703	0.000365	1.83E-06	0.000472
0.000101	0.001074	0.002686	0.001555	2.49E-05	0	0.00158	0.000404	0.003067	0.005052	26.80687	0.193805	0	27.00068	0.000325	4.46E-06	0	0.00033	0.00422	3.05E-05	0
4.04E-05	0.00017	0.00036	8.49E-05	0	7.38E-05	0.000159	0.000161	0.000484	0.000804	7.884409	0	0.84079	8.725199	0.008405	0	0.003333	0.011738	0.001848	0	0.000156
0.00201	0.002853	0.006783	0.001675	0	0.00041	0.002085	0.00804	0.008152	0.018278	459.1619	0	17.19437	476.3562	0.007285	0	0.021297	0.028582	0.012722	0	0.007479
7.11E-05	9.55E-05	0.000387	0.000231	0	0	0.000231	0.000284	0.000273	0.000788	15.58634	0	0	15.58634	2.1E-05	0	0	2.1E-05	0.002453	0	0
9.58E-09	7.4E-09	1.7E-08	0	0	0	0	3.83E-08	2.11E-08	5.94E-08	0	0	0	0	0	0	0	0	0	0	0
8.07E-06	5.19E-06	1.84E-05	4.32E-06	0	1.3E-06	5.62E-06	3.23E-05	1.48E-05	5.27E-05	0.581265	0	0.040434	0.621699	1.81E-06	0	1.71E-05	1.89E-05	2.52E-06	0	8.36E-06
1.52E-05	7.99E-05	0.000109	1.52E-05	0	6.17E-08	1.52E-05	6.09E-05	0.000228	0.000304	9.91179	0	0.002226	9.914016	0.000207	0	3.05E-06	0.00021	0.000209	0	2.26E-06
1.13E-05	4.43E-05	0.000354	0.000312	0	0	0.000312	4.52E-05	0.000127	0.000483	3.056438	0	0	3.056438	1.54E-05	0	0	1.54E-05	0.000481	0	0
6.83E-05	0.000359	0.000481	4.52E-05	0	1.3E-05	5.83E-05	0.000273	0.001025	0.001357	43.18574	0.290212	0.560553	44.0365	0.001041	0.000121	0.000649	0.001811	0.001149	3.04E-06	0.000317
0.000195	0.001035	0.010587	0.009377	0.000402	0	0.009779	0.000781	0.002958	0.013518	78.02479	4.287667	0	82.31246	0.000854	6.12E-05	0	0.000915	0.012282	0.000675	0
2.22E-06	1.18E-05	1.5E-05	8.28E-07	2.54E-07	0	1.08E-06	8.86E-06	3.38E-05	4.37E-05	0.752126	0.077033	0	0.829158	0.000546	0.000265	0	0.000812	0.000153	1.57E-05	0
2.65E-05	0.000139	0.000174	8.14E-06	0	1.21E-06	9.35E-06	0.000106	0.000396	0.000512	16.13713	0.062596	0.107194	16.30692	0.000142	3.24E-05	0.000129	0.000303	0.000237	8.86E-07	0.000105
1.04E-05	7.41E-05	0.000824	0.000764	9.63E-06	0	0.000773	4.14E-05	0.000212	0.001026	5.097907	0.15612	0	5.254027	8.23E-05	4.05E-06	0	8.64E-05	0.000802	2.46E-05	0
3.92E-09	2.11E-08	2.57E-08	7.59E-10	5.4E-11	0	8.13E-10	1.57E-08	6.02E-08	7.67E-08	0.001347	2.04E-05	0	0.001368	9.52E-07	8.49E-08	0	1.04E-06	2.75E-07	4.15E-09	0
6.67E-06	5.24E-05	7.87E-05	2.03E-05	0	8.56E-07	2.11E-05	2.67E-05	0.00015	0.000198	2.889482	0.177989	0.017502	3.084973	0.000449	0.000143	2.66E-05	0.000618	0.000264	4.44E-06	1.27E-05
7.7E-06	4.04E-05	0.000139	9.11E-05	4.27E-06	0	9.54E-05	3.08E-05	0.000115	0.000242	3.030712	0.260736	0	3.291448	9.57E-06	9.31E-07	0	1.05E-05	0.000477	4.1E-05	0



N2O_TOTE	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNL	ROG_TOTA	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNL	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX
6.26E-05	0.000647	0	0	0.000647	4.54E-05	2.28E-05	0.000122	0.000837	0.000781	0	0	0.000781	4.54E-05	2.28E-05	0.000122	0.000971	0.014815	0	0.000563	0.015378
0.026621	0.012874	0.003575	0	0.016449	0	0	0	0.016449	0.014656	0.00407	0	0.018726	0	0	0	0.018726	0.04683	0.039003	0	0.085833
0.001717	0.000598	3.72E-05	0	0.000635	0	0	0	0.000635	0.021411	0.00208	0	0.023491	0	0	0	0.023491	0.097717	0.005004	0	0.102721
0.05232	0.081214	0	0.303568	0.384782	0.215615	0.071806	0.178483	0.850686	0.118302	0	0.332363	0.450665	0.215615	0.071806	0.178483	0.916569	4.31727	0	2.867444	7.184714
0.001461	0.001335	0	0	0.001335	0	0	0	0.001335	0.00152	0	0	0.00152	0	0	0	0.00152	0.013984	0	0	0.013984
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0002	0.000102	0	0.001304	0.001406	0.000834	0.000281	0.000257	0.002778	0.00015	0	0.001427	0.001577	0.000834	0.000281	0.000257	0.002949	0.015515	0	0.010171	0.025685
0.010369	0.023586	0	0.063888	0.087474	0.057205	0.017427	0.051678	0.213784	0.034302	0	0.069947	0.104249	0.057205	0.017427	0.051678	0.230559	0.99268	0	0.634548	1.627228
9.25E-06	4.44E-05	0	0	4.44E-05	0	0	0	4.44E-05	5.05E-05	0	0	5.05E-05	0	0	0	5.05E-05	0.00027	0	0	0.00027
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.25E-08	1.18E-08	0	1.43E-07	1.55E-07	8.81E-08	2.58E-08	2.67E-08	2.96E-07	1.73E-08	0	1.57E-07	1.74E-07	8.81E-08	2.58E-08	2.67E-08	3.15E-07	1.79E-06	0	1.12E-06	2.91E-06
0.031586	0.038859	0	0.158769	0.197628	0.084992	0.028076	0.067999	0.378696	0.056384	0	0.173827	0.230211	0.084992	0.028076	0.067999	0.411279	2.294051	0	1.495802	3.789853
0.000933	0.000229	0	0	0.000229	0	0	0	0.000229	0.000261	0	0	0.000261	0	0	0	0.000261	0.002191	0	0	0.002191
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.8E-06	5.26E-06	0	6.15E-05	6.67E-05	3.27E-05	1.03E-05	1.03E-05	0.00012	7.67E-06	0	6.73E-05	7.5E-05	3.27E-05	1.03E-05	1.03E-05	0.000128	0.000796	0	0.00048	0.001276
0.006862	0.01434	0.002241	0.015761	0.032342	0.014989	0.004573	0.023034	0.074939	0.020542	0.003268	0.017251	0.041061	0.014989	0.004573	0.023034	0.083657	0.309542	0.017824	0.219696	0.547061
0.010127	0.026376	0.000309	0	0.026685	0	0	0	0.026685	0.030027	0.000352	0	0.03038	0	0	0	0.03038	0.079165	0.002565	0	0.08173
0.00084	0.001361	0.000281	0.001812	0.003454	0.001653	0.0005	0.002533	0.00814	0.001986	0.00041	0.001984	0.00438	0.001653	0.0005	0.002533	0.009066	0.030676	0.002224	0.027763	0.060662
0.00425	0.007002	9.61E-05	0	0.007098	0	0	0	0.007098	0.007971	0.000109	0	0.008081	0	0	0	0.008081	0.019092	0.000796	0	0.019889
0.002003	0.059124	0	0.02566	0.084784	0.029631	0.051989	0.054189	0.220593	0.069145	0	0.027875	0.09702	0.029631	0.051989	0.054189	0.232829	0.688185	0	0.124647	0.812832
0.020201	0.035404	0	0.115549	0.150953	0.053664	0.0177	0.044447	0.266764	0.049638	0	0.126493	0.176131	0.053664	0.0177	0.044447	0.291942	1.49232	0	0.863174	2.355494
0.002453	0.000453	0	0	0.000453	0	0	0	0.000453	0.000516	0	0	0.000516	0	0	0	0.000516	0.006892	0	0	0.006892
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.09E-05	5.73E-06	0	6.94E-05	7.51E-05	3.91E-05	1.19E-05	1.23E-05	0.000138	8.37E-06	0	7.6E-05	8.43E-05	3.91E-05	1.19E-05	1.23E-05	0.000148	0.000868	0	0.000541	0.001409
0.000211	0.001172	0	1.62E-05	0.001188	0.003367	0.001227	2.35E-05	0.005805	0.001564	0	1.77E-05	0.001582	0.003367	0.001227	2.35E-05	0.006199	0.033766	0	0.00026	0.034026
0.000481	0.000331	0	0	0.000331	0	0	0	0.000331	0.000377	0	0	0.000377	0	0	0	0.000377	0.00112	0	0	0.00112
0.001469	0.005814	0.000521	0.004152	0.010487	0.002043	0.000741	0.004886	0.018157	0.008202	0.000755	0.004536	0.013494	0.002043	0.000741	0.004886	0.021164	0.131006	0.007763	0.075986	0.214755
0.012957	0.018387	0.001317	0	0.019704	0	0	0	0.019704	0.020932	0.001499	0	0.022431	0	0	0	0.022431	0.050886	0.014511	0	0.065397
0.000169	7.8E-06	3.79E-06	0	1.16E-05	0	0	0	1.16E-05	0.000557	0.000271	0	0.000828	0	0	0	0.000828	0.002205	0.000437	0	0.002642
0.000343	0.000713	0.000121	0.000698	0.001532	0.000271	9.64E-05	0.000325	0.002225	0.001012	0.000177	0.000763	0.001952	0.000271	9.64E-05	0.000325	0.002644	0.01644	0.000938	0.013056	0.030434
0.000827	0.001772	8.71E-05	0	0.001859	0	0	0	0.001859	0.002018	9.92E-05	0	0.002117	0	0	0	0.002117	0.004614	0.000772	0	0.005386
2.79E-07	1.36E-08	1.21E-09	0	1.48E-08	0	0	0	1.48E-08	9.72E-07	8.67E-08	0	1.06E-06	0	0	0	1.06E-06	4.04E-06	8.64E-08	0	4.12E-06
0.000281	0.00278	0.000676	0.000178	0.003634	0.000376	0.000158	0.000379	0.004546	0.003807	0.000975	0.000194	0.004977	0.000376	0.000158	0.000379	0.005889	0.062134	0.005245	0.003377	0.070755
0.000518	0.000206	2E-05	0	0.000226	0	0	0	0.000226	0.000235	2.28E-05	0	0.000257	0	0	0	0.000257	0.000608	0.000382	0	0.00099



SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTE	NH3_RUNEX	Fuel Consumption
3.03E-06	0	8.37E-08	3.11E-06	4.19986E-06	0.033198
0.00152	8.03E-05	0	0.0016	0.014400399	15.09362
0	0	0	0	0.003714875	0.973322
0.01201	0	0.000454	0.012464	0.123548114	132.9429
8.79E-05	0	0	8.79E-05	0.00011722	0.828352
0	0	0	0	0	0
0.000103	0	5.02E-06	0.000108	0.001376626	1.150318
0.00165	0	7.02E-05	0.00172	0.016822432	18.3496
5.56E-07	0	0	5.56E-07	4.32234E-07	0.005245
0	0	0	0	0	0
1.19E-08	0	6.31E-10	1.25E-08	1.89052E-07	0.000133
0.008124	0	0.000288	0.008412	0.070126873	89.72537
5.61E-05	0	0	5.61E-05	5.41114E-05	0.529212
0	0	0	0	0	0
5.27E-06	0	2.85E-07	5.56E-06	8.29232E-05	0.05929
0.001552	5.84E-06	1.81E-05	0.001576	0.007299251	16.81012
0.000605	3.73E-06	0	0.000609	0.012008978	5.741893
0.000216	8.4E-07	2.33E-06	0.000219	0.000907947	2.337657
0.000254	1.83E-06	0	0.000256	0.005195099	2.409791
7.8E-05	0	8.32E-06	8.63E-05	0.000339245	0.920954
0.004544	0	0.00017	0.004714	0.032272949	50.27991
0.000148	0	0	0.000148	0.000110168	1.391069
0	0	0	0	0	0
5.75E-06	0	4E-07	6.15E-06	9.15128E-05	0.065621
9.81E-05	0	2.2E-08	9.81E-05	0.000221005	1.046435
2.89E-05	0	0	2.89E-05	0.000399781	0.272785
0.000427	2.87E-06	5.55E-06	0.000436	0.001008866	4.6481
0.000738	4.06E-05	0	0.000779	0.008304816	7.346328
0	0	0	0	0.00078279	0.095838
0.00016	6.19E-07	1.06E-06	0.000161	0.000397393	1.721213
4.82E-05	1.48E-06	0	4.97E-05	0.000460242	0.468918
0	0	0	0	1.38346E-06	0.000158
2.86E-05	1.76E-06	1.73E-07	3.05E-05	0.000130711	0.325622
2.87E-05	2.47E-06	0	3.11E-05	0.00025556	0.293759

0	0	0	0	8.49311E-05	0.01347
8.59E-05	0	1.69E-07	8.61E-05	0.000277323	0.917955
7.7E-05	0	0	7.7E-05	0.001164237	0.725813
0	0	0	0	0	0

Sheet 12: Raw EMFAC2021 Output for 2040 - Marin County

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Marin

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNE	NOx_IDLE	NOx_STRE	NOx_TOTE	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_TO	PM2.5_PM
Marin	2040	HHDT	Aggregate	Aggregate	Gasoline	0.265333	31.97697	31.97697	0	5.308792	0	8.36E-05	0	4.36E-07	8.41E-05	5.04E-08	0	2.77E-09	5.31E-08	1.76E-07
Marin	2040	HHDT	Aggregate	Aggregate	Diesel	825.3743	82766.22	82766.22	0	11409.09	0	0.133293	0.043182	0.035215	0.21169	0.002185	1.91E-05	0	0.002204	0.000806
Marin	2040	HHDT	Aggregate	Aggregate	Electricity	229.9686	17739.52	0	17739.52	2359.231	32951.12	0	0	0	0	0	0	0	0	0.000167
Marin	2040	HHDT	Aggregate	Aggregate	Natural Gas	98.62091	5943.089	5943.089	0	729.6413	0	0.003171	0.000815	0	0.003986	1.02E-05	2.43E-06	0	1.27E-05	5.9E-05
Marin	2040	LDA	Aggregate	Aggregate	Gasoline	100140.7	3359196	3359196	0	465564	0	0.079321	0	0.089766	0.169087	0.001858	0	0.000458	0.002316	0.007406
Marin	2040	LDA	Aggregate	Aggregate	Diesel	121.0736	2816.782	2816.782	0	497.8826	0	0.000201	0	0	0.000201	1.1E-05	0	0	1.1E-05	6.21E-06
Marin	2040	LDA	Aggregate	Aggregate	Electricity	13482.85	531035.2	0	531035.2	63541.78	205023.4	0	0	0	0	0	0	0	0	0.001171
Marin	2040	LDA	Aggregate	Aggregate	Plug-in Hyb	4639.771	162425.1	67029.71	95395.42	19185.45	28812.26	0.000466	0	0.002479	0.002945	3.74E-05	0	1.94E-05	5.68E-05	0.000358
Marin	2040	LDT1	Aggregate	Aggregate	Gasoline	8094.811	248693.3	248693.3	0	35996.06	0	0.007466	0	0.008377	0.015843	0.000166	0	4.43E-05	0.00021	0.000548
Marin	2040	LDT1	Aggregate	Aggregate	Diesel	0.076354	2.677543	2.677543	0	0.35864	0	8.57E-08	0	0	8.57E-08	1.13E-08	0	0	1.13E-08	5.9E-09
Marin	2040	LDT1	Aggregate	Aggregate	Electricity	182.186	7433.676	0	7433.676	868.4775	2870.013	0	0	0	0	0	0	0	0	1.64E-05
Marin	2040	LDT1	Aggregate	Aggregate	Plug-in Hyb	137.6385	5108.105	2083.302	3024.803	569.1351	913.5806	1.45E-05	0	7.35E-05	8.8E-05	1.04E-06	0	4.91E-07	1.53E-06	1.13E-05
Marin	2040	LDT2	Aggregate	Aggregate	Gasoline	62378.45	2067017	2067017	0	286237.4	0	0.058776	0	0.070641	0.129418	0.00123	0	0.000303	0.001533	0.004557
Marin	2040	LDT2	Aggregate	Aggregate	Diesel	265.5494	8374.93	8374.93	0	1198.118	0	0.000257	0	0	0.000257	3.65E-05	0	0	3.65E-05	1.85E-05
Marin	2040	LDT2	Aggregate	Aggregate	Electricity	2091.021	59066.24	0	59066.24	9982.587	22804.45	0	0	0	0	0	0	0	0	0.00013
Marin	2040	LDT2	Aggregate	Aggregate	Plug-in Hyb	1501.287	53301.08	21876.17	31424.91	6207.822	9491.26	0.000152	0	0.000802	0.000954	1.16E-05	0	5.82E-06	1.74E-05	0.000118
Marin	2040	LHDT1	Aggregate	Aggregate	Gasoline	3201.58	107753.9	107753.9	0	47698.77	0	0.003564	9.4E-05	0.023469	0.027127	0.000142	0	6.52E-06	0.000148	0.000238
Marin	2040	LHDT1	Aggregate	Aggregate	Diesel	2067.835	69190.61	69190.61	0	26010.77	0	0.033382	0.002634	0	0.036017	0.001614	5.98E-05	0	0.001674	0.000229
Marin	2040	LHDT1	Aggregate	Aggregate	Electricity	2053.729	96173.32	0	96173.32	28786.16	63013.95	0	0	0	0	0	0	0	0	0.000212
Marin	2040	LHDT2	Aggregate	Aggregate	Gasoline	372.1311	12335.8	12335.8	0	5544.199	0	0.000406	9.83E-06	0.002487	0.002903	1.55E-05	0	5.96E-07	1.61E-05	2.72E-05
Marin	2040	LHDT2	Aggregate	Aggregate	Diesel	960.7442	31605.18	31605.18	0	12084.95	0	0.016499	0.001213	0	0.017712	0.000809	2.78E-05	0	0.000837	0.000105
Marin	2040	LHDT2	Aggregate	Aggregate	Electricity	512.4749	23170.76	0	23170.76	6785.869	14941	0	0	0	0	0	0	0	0	5.11E-05
Marin	2040	MCY	Aggregate	Aggregate	Gasoline	6288.133	33128.3	33128.3	0	12576.27	0	0.017852	0	0.001189	0.019041	7.01E-05	0	4.51E-05	0.000115	3.65E-05
Marin	2040	MDV	Aggregate	Aggregate	Gasoline	35353.14	1142685	1142685	0	161808.5	0	0.036678	0	0.043293	0.079971	0.000684	0	0.000173	0.000857	0.002519
Marin	2040	MDV	Aggregate	Aggregate	Diesel	484.6184	14143.17	14143.17	0	2140.287	0	0.000236	0	0	0.000236	2.64E-05	0	0	2.64E-05	3.12E-05
Marin	2040	MDV	Aggregate	Aggregate	Electricity	1932.568	54034.38	0	54034.38	9194.628	20861.73	0	0	0	0	0	0	0	0	0.000119
Marin	2040	MDV	Aggregate	Aggregate	Plug-in Hyb	936.4223	32353.43	13287.18	19066.25	3872.106	5758.575	9.24E-05	0	0.0005	0.000593	7.19E-06	0	3.72E-06	1.09E-05	7.13E-05
Marin	2040	MH	Aggregate	Aggregate	Gasoline	336.3522	3574.971	3574.971	0	33.64868	0	0.000444	0	1.58E-05	0.00046	5.29E-06	0	1.24E-08	5.3E-06	1.18E-05
Marin	2040	MH	Aggregate	Aggregate	Diesel	250.2206	2223.465	2223.465	0	25.02206	0	0.006706	0	0	0.006706	8.91E-05	0	0	8.91E-05	9.8E-06
Marin	2040	MHDT	Aggregate	Aggregate	Gasoline	213.6184	9735.838	9735.838	0	4274.077	0	0.001086	1.5E-05	0.001595	0.002697	1.45E-05	0	2.1E-06	1.66E-05	3.22E-05
Marin	2040	MHDT	Aggregate	Aggregate	Diesel	1141.268	42365.29	42365.29	0	12822.26	0	0.022553	0.010287	0.018848	0.051688	0.000177	4.58E-06	0	0.000181	0.00014
Marin	2040	MHDT	Aggregate	Aggregate	Electricity	700.7586	34339.85	0	34339.85	8888.581	37591.98	0	0	0	0	0	0	0	0	0.000114
Marin	2040	MHDT	Aggregate	Aggregate	Natural Gas	24.33578	913.4865	913.4865	0	216.1279	0	7.32E-05	0.000172	0	0.000246	1.49E-06	6.01E-07	0	2.09E-06	3.02E-06
Marin	2040	OBUS	Aggregate	Aggregate	Gasoline	63.95906	1941.714	1941.714	0	1279.693	0	0.00048	3.86E-06	0.000514	0.000998	2.46E-06	0	3.83E-07	2.85E-06	6.42E-06



Marin	2040 OBUS	Aggregate	Aggregate	Diesel	49.51237	3242.148	3242.148	0	620.6498	0	0.004592	0.000437	0.000768	0.005798	8.55E-05	4.14E-07	0	8.59E-05	1.07E-05
Marin	2040 OBUS	Aggregate	Aggregate	Electricity	18.84043	1325.15	0	1325.15	376.9594	1468.064	0	0	0	0	0	0	0	0	4.38E-06
Marin	2040 OBUS	Aggregate	Aggregate	Natural Gas	0.536666	22.2987	22.2987	0	4.776326	0	2.26E-06	8.76E-07	0	3.14E-06	3.76E-08	3.1E-09	0	4.07E-08	7.37E-08
Marin	2040 SBUS	Aggregate	Aggregate	Gasoline	42.43728	2152.499	2152.499	0	169.7491	0	0.000396	3.65E-05	0.00018	0.000613	2.37E-06	0	1.27E-07	2.5E-06	4.75E-06
Marin	2040 SBUS	Aggregate	Aggregate	Diesel	71.83225	1516.25	1516.25	0	1040.131	0	0.001156	0.000692	0.00075	0.002598	8.63E-06	2.58E-07	0	8.89E-06	5.01E-06
Marin	2040 SBUS	Aggregate	Aggregate	Electricity	40.81456	1308.597	0	1308.597	483.5876	1378.549	0	0	0	0	0	0	0	0	3.76E-06
Marin	2040 SBUS	Aggregate	Aggregate	Natural Gas	4.555479	94.6207	94.6207	0	65.96334	0	3.15E-05	2.57E-05	0	5.72E-05	3.52E-07	7.57E-08	0	4.28E-07	3.13E-07
Marin	2040 UBUS	Aggregate	Aggregate	Gasoline	33.83439	2940.766	2940.766	0	135.3376	0	5.34E-05	0	4.24E-05	9.58E-05	3.88E-06	0	2E-08	3.9E-06	6.48E-06
Marin	2040 UBUS	Aggregate	Aggregate	Diesel	5.230331	506.6197	506.6197	0	20.92132	0	7.13E-05	0	0	7.13E-05	1.28E-06	0	0	1.28E-06	1.89E-06
Marin	2040 UBUS	Aggregate	Aggregate	Electricity	71.95567	9016.287	0	9016.287	287.8227	15717.59	0	0	0	0	0	0	0	0	6.23E-05
Marin	2040 UBUS	Aggregate	Aggregate	Natural Gas	2.113363	204.7043	204.7043	0	8.45345	0	5.03E-06	0	0	5.03E-06	3.93E-08	0	0	3.93E-08	7.65E-07

PM2.5_PM	PM2.5_TO	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TOT	PM10_PM	PM10_PM	PM10_TOT	CO2_RUNE	CO2_IDLE	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLE	CH4_STRE	CH4_TOTE	N2O_RUNE	N2O_IDLE	N2O_STRE	N2O_TOTE
1.18E-06	1.41E-06	5.48E-08	0	3.02E-09	5.78E-08	7.05E-07	3.36E-06	4.12E-06	0.064851	0	0.000254	0.065106	3.44E-06	0	8.32E-10	3.44E-06	3.88E-06	0	2.37E-08	3.9E-06
0.002714	0.005725	0.002284	2E-05	0	0.002304	0.003224	0.007755	0.013283	123.8566	8.302358	0	132.159	5.59E-05	0.000197	0	0.000253	0.019514	0.001308	0	0.020822
0.000336	0.000503	0	0	0	0	0.000666	0.000961	0.001627	0	0	0	0	0	0	0	0	0	0	0	0
0.000395	0.000467	1.11E-05	2.64E-06	0	1.38E-05	0.000236	0.001129	0.001379	8.470335	0.959406	0	9.429742	0.007248	0.002019	0	0.009267	0.001727	0.000196	0	0.001922
0.008619	0.01834	0.002021	0	0.000498	0.002518	0.029623	0.024626	0.056767	830.0412	0	28.22096	858.2621	0.003768	0	0.01856	0.022328	0.011997	0	0.013315	0.025312
7.38E-06	2.45E-05	1.15E-05	0	0	1.15E-05	2.48E-05	2.11E-05	5.74E-05	0.616646	0	0	0.616646	1.22E-06	0	0	1.22E-06	9.72E-05	0	0	9.72E-05
0.0009	0.002071	0	0	0	0	0.004683	0.002571	0.007254	0	0	0	0	0	0	0	0	0	0	0	0
0.000242	0.000657	4.07E-05	0	2.11E-05	6.18E-05	0.001432	0.000691	0.002185	19.57758	0	1.193015	20.7706	5.73E-05	0	0.000866	0.000923	7.61E-05	0	0.0004	0.000476
0.000763	0.001522	0.00018	0	4.82E-05	0.000228	0.002193	0.002181	0.004602	72.49466	0	2.627056	75.12171	0.00035	0	0.001763	0.002113	0.001	0	0.001145	0.002145
8.04E-09	2.52E-08	1.18E-08	0	0	1.18E-08	2.36E-08	2.3E-08	5.84E-08	0.001004	0	0	0.001004	1.53E-09	0	0	1.53E-09	1.58E-07	0	0	1.58E-07
1.26E-05	2.9E-05	0	0	0	0	6.56E-05	3.6E-05	0.000102	0	0	0	0	0	0	0	0	0	0	0	0
7.62E-06	2.04E-05	1.13E-06	0	5.34E-07	1.66E-06	4.5E-05	2.18E-05	6.85E-05	0.608487	0	0.040069	0.648556	1.79E-06	0	2.59E-05	2.76E-05	2.39E-06	0	1.2E-05	1.44E-05
0.006261	0.012351	0.001337	0	0.00033	0.001667	0.018228	0.017888	0.037783	619.6769	0	21.51514	641.1921	0.003039	0	0.014738	0.017777	0.008097	0	0.009846	0.017943
2.56E-05	8.06E-05	3.82E-05	0	0	3.82E-05	7.39E-05	7.32E-05	0.000185	2.400195	0	0	2.400195	4.84E-06	0	0	4.84E-06	0.000378	0	0	0.000378
0.0001	0.00023	0	0	0	0	0.000521	0.000286	0.000807	0	0	0	0	0	0	0	0	0	0	0	0
7.95E-05	0.000214	1.26E-05	0	6.32E-06	1.89E-05	0.00047	0.000227	0.000716	6.389411	0	0.462142	6.851553	1.87E-05	0	0.000281	0.000299	2.49E-05	0	0.00013	0.000155
0.003243	0.003628	0.000154	0	7.1E-06	0.000161	0.00095	0.009265	0.010376	90.90066	0.386099	1.267255	92.55401	0.00016	0.00031	0.001178	0.001649	0.000273	8.85E-06	0.002145	0.002427
0.002082	0.003985	0.001687	6.25E-05	0	0.00175	0.000915	0.005949	0.008614	46.44789	0.270477	0	46.71837	0.000359	1.16E-05	0	0.000371	0.007318	4.26E-05	0	0.00736
0.001447	0.001659	0	0	0	0	0.000848	0.004135	0.004983	0	0	0	0	0	0	0	0	0	0	0	0
0.000433	0.000476	1.68E-05	0	6.48E-07	1.75E-05	0.000109	0.001237	0.001364	11.71813	0.051782	0.144322	11.91423	1.67E-05	3.28E-05	0.000119	0.000169	3.54E-05	9.35E-07	0.000229	0.000265
0.00111	0.002051	0.000845	2.91E-05	0	0.000874	0.000418	0.00317	0.004463	24.75518	0.202534	0	24.95772	0.000181	5.4E-06	0	0.000187	0.0039	3.19E-05	0	0.003932
0.000407	0.000458	0	0	0	0	0.000204	0.001162	0.001366	0	0	0	0	0	0	0	0	0	0	0	0
0.000153	0.000305	7.52E-05	0	4.83E-05	0.000123	0.000146	0.000438	0.000708	6.764704	0	0.558404	7.323107	0.004861	0	0.002037	0.006898	0.001321	0	7.44E-05	0.001395
0.003512	0.006889	0.000744	0	0.000188	0.000932	0.010077	0.010035	0.021044	415.6387	0	14.75329	430.3919	0.001794	0	0.008776	0.01057	0.004708	0	0.00577	0.010478
4.45E-05	0.000102	2.76E-05	0	0	2.76E-05	0.000125	0.000127	0.000279	5.378757	0	0	5.378757	3.94E-06	0	0	3.94E-06	0.000847	0	0	0.000847
9.17E-05	0.000211	0	0	0	0	0.000477	0.000262	0.000738	0	0	0	0	0	0	0	0	0	0	0	0
4.83E-05	0.000131	7.82E-06	0	4.05E-06	1.19E-05	0.000285	0.000138	0.000435	3.880809	0	0.350957	4.231766	1.13E-05	0	0.000174	0.000186	1.5E-05	0	8.06E-05	9.55E-05
6.21E-05	7.92E-05	5.76E-06	0	1.35E-08	5.77E-06	4.73E-05	0.000177	0.00023	7.664164	0	0.001116	7.665281	1.64E-05	0	1.23E-06	1.76E-05	5.09E-05	0	1.83E-06	5.27E-05
3.84E-05	0.000137	9.31E-05	0	0	9.31E-05	3.92E-05	0.00011	0.000242	2.663691	0	0	2.663691	1.03E-05	0	0	1.03E-05	0.00042	0	0	0.00042
0.000169	0.000218	1.58E-05	0	2.29E-06	1.81E-05	0.000129	0.000483	0.00063	16.94479	0.112992	0.183201	17.24098	3.94E-05	6.32E-05	0.000185	0.000287	8.97E-05	1.37E-06	0.000136	0.000227
0.000742	0.001063	0.000185	4.79E-06	0	0.000189	0.00056	0.00212	0.002869	49.12084	2.613084	0	51.73393	1.85E-05	1.1E-05	0	2.94E-05	0.007739	0.000412	0	0.008151
0.0003	0.000414	0	0	0	0	0.000454	0.000858	0.001312	0	0	0	0	0	0	0	0	0	0	0	0
1.61E-05	2.12E-05	1.62E-06	6.54E-07	0	2.28E-06	1.21E-05	4.6E-05	6.04E-05	0.954474	0.146997	0	1.101471	0.000791	0.000415	0	0.001206	0.000195	3E-05	0	0.000225
3.36E-05	4.28E-05	2.68E-06	0	4.16E-07	3.1E-06	2.57E-05	9.59E-05	0.000125	3.409176	0.025329	0.04137	3.475875	1.46E-05	1.32E-05	4.57E-05	7.35E-05	2.6E-05	2.93E-07	3.58E-05	6.21E-05

7.91E-05	0.000176	8.93E-05	4.33E-07	0	8.98E-05	4.29E-05	0.000226	0.000359	4.678586	0.144679	0	4.823265	8.17E-06	2.73E-06	0	1.09E-05	0.000737	2.28E-05	0	0.00076
1.15E-05	1.58E-05	0	0	0	0	1.75E-05	3.27E-05	5.02E-05	0	0	0	0	0	0	0	0	0	0	0	0
3.97E-07	5.11E-07	4.09E-08	3.37E-09	0	4.43E-08	2.95E-07	1.13E-06	1.47E-06	0.022483	0.000688	0	0.02317	2.07E-05	2.09E-06	0	2.28E-05	4.58E-06	1.4E-07	0	4.72E-06
3.73E-05	4.45E-05	2.58E-06	0	1.38E-07	2.72E-06	1.9E-05	0.000107	0.000128	1.817009	0.115138	0.009788	1.941935	4.48E-06	0.000117	1.32E-05	0.000135	3.5E-05	3.45E-06	1.59E-05	5.44E-05
2.63E-05	4.02E-05	9.02E-06	2.7E-07	0	9.29E-06	2.01E-05	7.51E-05	0.000104	1.777457	0.154471	0	1.931928	1.23E-06	6.23E-07	0	1.85E-06	0.00028	2.43E-05	0	0.000304
1.13E-05	1.51E-05	0	0	0	0	1.5E-05	3.24E-05	4.74E-05	0	0	0	0	0	0	0	0	0	0	0	0
1.64E-06	2.38E-06	3.83E-07	8.23E-08	0	4.66E-07	1.25E-06	4.68E-06	6.4E-06	0.118284	0.021077	0	0.139361	0.000282	6.7E-05	0	0.000349	2.41E-05	4.3E-06	0	2.84E-05
0.000103	0.000114	4.22E-06	0	2.17E-08	4.24E-06	2.59E-05	0.000295	0.000325	2.755915	0	0.005182	2.761097	4.31E-06	0	4.13E-06	8.43E-06	9.52E-06	0	7.48E-06	1.7E-05
2.15E-05	2.47E-05	1.34E-06	0	0	1.34E-06	7.57E-06	6.14E-05	7.03E-05	0.43583	0	0	0.43583	8.61E-07	0	0	8.61E-07	6.87E-05	0	0	6.87E-05
0.000191	0.000254	0	0	0	0	0.000249	0.000547	0.000796	0	0	0	0	0	0	0	0	0	0	0	0
8.69E-06	9.49E-06	4.11E-08	0	0	4.11E-08	3.06E-06	2.48E-05	2.79E-05	0.203675	0	0	0.203675	0.000602	0	0	0.000602	4.15E-05	0	0	4.15E-05

ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNL	ROG_TOTA	TOG_RUNE	TOG_IDLE	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNL	TOG_TOTA	CO_RUNEX	CO_IDLE	CO_STRE	CO_TOTE	SOx_RUNE
1.6E-05	0	4.46E-09	1.6E-05	3.39E-07	5.55E-08	7E-07	1.71E-05	2.33E-05	0	4.89E-09	2.33E-05	3.39E-07	5.55E-08	7E-07	2.44E-05	0.001081	0	2.93E-05	0.00111	6.41E-07
0.001204	0.00424	0	0.005444	0	0	0	0.005444	0.001371	0.004827	0	0.006197	0	0	0	0.006197	0.005157	0.062405	0	0.067562	0.001173
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.000156	3.03E-05	0	0.000186	0	0	0	0.000186	0.007457	0.002062	0	0.009519	0	0	0	0.009519	0.064412	0.007571	0	0.071983	0
0.011759	0	0.074872	0.086631	0.109158	0.022498	0.082286	0.300574	0.017158	0	0.081976	0.099134	0.109158	0.022498	0.082286	0.313076	1.635828	0	0.94102	2.576849	0.008206
2.63E-05	0	0	2.63E-05	0	0	0	2.63E-05	2.99E-05	0	0	2.99E-05	0	0	0	2.99E-05	0.000575	0	0	0.000575	5.84E-06
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.000191	0	0.003736	0.003927	0.003924	0.000836	0.001693	0.010381	0.000279	0	0.00409	0.00437	0.003924	0.000836	0.001693	0.010823	0.02909	0	0.029148	0.058238	0.000194
0.001181	0	0.007578	0.008759	0.016298	0.003048	0.011895	0.039999	0.001723	0	0.008296	0.01002	0.016298	0.003048	0.011895	0.041261	0.139231	0	0.085499	0.22473	0.000717
3.29E-08	0	0	3.29E-08	0	0	0	3.29E-08	3.75E-08	0	0	3.75E-08	0	0	0	3.75E-08	3.44E-07	0	0	3.44E-07	9.52E-09
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.95E-06	0	0.000111	0.000117	6.66E-05	1.8E-05	2.39E-05	0.000225	8.68E-06	0	0.000121	0.00013	6.66E-05	1.8E-05	2.39E-05	0.000239	0.000904	0	0.000865	0.001769	6.02E-06
0.009731	0	0.061238	0.07097	0.084505	0.016247	0.06421	0.235931	0.0142	0	0.067048	0.081248	0.084505	0.016247	0.06421	0.24621	1.184897	0	0.736401	1.921297	0.006126
0.000104	0	0	0.000104	0	0	0	0.000104	0.000119	0	0	0.000119	0	0	0	0.000119	0.001129	0	0	0.001129	2.27E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.25E-05	0	0.001209	0.001271	0.00097	0.000227	0.000384	0.002853	9.12E-05	0	0.001324	0.001415	0.00097	0.000227	0.000384	0.002996	0.009494	0	0.009431	0.018925	6.32E-05
0.000561	0.001079	0.005414	0.007054	0.007631	0.001303	0.01019	0.026179	0.000818	0.001575	0.005928	0.008321	0.007631	0.001303	0.01019	0.027446	0.069932	0.013345	0.169172	0.252449	0.000899
0.007728	0.00025	0	0.007978	0	0	0	0.007978	0.008798	0.000285	0	0.009083	0	0	0	0.009083	0.020438	0.002074	0	0.022512	0.00044
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.68E-05	0.000113	0.000536	0.000706	0.000894	0.000152	0.001205	0.002957	8.29E-05	0.000165	0.000587	0.000834	0.000894	0.000152	0.001205	0.003086	0.008098	0.001551	0.020001	0.02965	0.000116
0.003905	0.000116	0	0.004021	0	0	0	0.004021	0.004446	0.000132	0	0.004578	0	0	0	0.004578	0.010342	0.000963	0	0.011305	0.000235
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.029472	0	0.014568	0.044041	0.025154	0.049528	0.053462	0.172185	0.036555	0	0.015856	0.052412	0.025154	0.049528	0.053462	0.180556	0.363407	0	0.111544	0.474951	6.69E-05
0.005902	0	0.037495	0.043397	0.048846	0.009415	0.036789	0.138447	0.008613	0	0.041053	0.049665	0.048846	0.009415	0.036789	0.144715	0.680303	0	0.425354	1.105657	0.004109
8.48E-05	0	0	8.48E-05	0	0	0	8.48E-05	9.65E-05	0	0	9.65E-05	0	0	0	9.65E-05	0.002329	0	0	0.002329	5.1E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.79E-05	0	0.000754	0.000792	0.000653	0.000148	0.000267	0.00186	5.54E-05	0	0.000826	0.000881	0.000653	0.000148	0.000267	0.001949	0.005766	0	0.005883	0.011649	3.84E-05
4.74E-05	0	4.49E-06	5.18E-05	0.0007	0.000126	3.96E-06	0.000882	6.91E-05	0	4.92E-06	7.4E-05	0.0007	0.000126	3.96E-06	0.000904	0.000672	0	9.63E-05	0.000768	7.58E-05
0.000222	0	0	0.000222	0	0	0	0.000222	0.000253	0	0	0.000253	0	0	0	0.000253	0.000672	0	0	0.000672	2.52E-05
0.000159	0.000242	0.000927	0.001329	0.00052	8.35E-05	0.001003	0.002935	0.000232	0.000353	0.001015	0.001601	0.00052	8.35E-05	0.001003	0.003207	0.002714	0.003602	0.017398	0.023714	0.000168
0.000398	0.000236	0	0.000634	0	0	0	0.000634	0.000453	0.000269	0	0.000721	0	0	0	0.000721	0.002496	0.00979	0	0.012286	0.000465
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.13E-05	5.93E-06	0	1.72E-05	0	0	0	1.72E-05	0.000807	0.000424	0	0.001231	0	0	0	0.001231	0.002976	0.001189	0	0.004165	0
6.85E-05	5.29E-05	0.000249	0.00037	0.000294	5.07E-05	0.000331	0.001045	1E-04	7.72E-05	0.000272	0.000449	0.000294	5.07E-05	0.000331	0.001125	0.001474	0.000409	0.00486	0.006743	3.37E-05

0.000176	5.87E-05	0	0.000234	0	0	0	0.000234	0.0002	6.68E-05	0	0.000267	0	0	0	0.000267	0.000566	0.000916	0	0.001481	4.43E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.96E-07	2.99E-08	0	3.26E-07	0	0	0	3.26E-07	2.12E-05	2.14E-06	0	2.33E-05	0	0	0	2.33E-05	8.36E-05	6.14E-06	0	8.97E-05	0
1.9E-05	0.000498	7.21E-05	0.000589	0.000204	3.45E-05	0.000143	0.00097	2.78E-05	0.000726	7.89E-05	0.000833	0.000204	3.45E-05	0.000143	0.001214	0.00047	0.003847	0.001521	0.005837	1.8E-05
2.65E-05	1.34E-05	0	3.99E-05	0	0	0	3.99E-05	3.01E-05	1.53E-05	0	4.54E-05	0	0	0	4.54E-05	0.000126	0.000533	0	0.00066	1.68E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.03E-06	9.57E-07	0	4.99E-06	0	0	0	4.99E-06	0.000288	6.83E-05	0	0.000356	0	0	0	0.000356	0.000855	0.000146	0	0.001001	0
1.13E-05	0	1.39E-05	2.52E-05	1.15E-05	3.67E-06	1.35E-05	5.39E-05	1.64E-05	0	1.53E-05	3.17E-05	1.15E-05	3.67E-06	1.35E-05	6.04E-05	0.001865	0	0.000901	0.002766	2.72E-05
1.85E-05	0	0	1.85E-05	0	0	0	1.85E-05	2.11E-05	0	0	2.11E-05	0	0	0	2.11E-05	1.5E-05	0	0	1.5E-05	4.13E-06
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.6E-06	0	0	8.6E-06	0	0	0	8.6E-06	0.000614	0	0	0.000614	0	0	0	0.000614	0.004845	0	0	0.004845	0

SOx\_IDLEX SOx\_STREX SOx\_TOTE NH3\_RUNE Fuel Consumption

0	2.52E-09	6.44E-07	1.59E-06	0.006865
7.86E-05	0	0.001251	0.019847	11.80571
0	0	0	0	0
0	0	0	0.004747	1.089934
0	0.000279	0.008485	0.154467	90.50267
0	0	5.84E-06	9.63E-06	0.055085
0	0	0	0	0
0	1.18E-05	0.000205	0.003096	2.190233
0	2.6E-05	0.000743	0.011239	7.921491
0	0	9.52E-09	9.15E-09	8.97E-05
0	0	0	0	0
0	3.96E-07	6.41E-06	9.65E-05	0.068389
0	0.000213	0.006339	0.094724	67.6129
0	0	2.27E-05	2.86E-05	0.214408
0	0	0	0	0
0	4.57E-06	6.77E-05	0.001013	0.722488
3.82E-06	1.25E-05	0.000915	0.005345	9.759705
2.56E-06	0	0.000443	0.016147	4.173333
0	0	0	0	0
5.12E-07	1.43E-06	0.000118	0.000612	1.256341
1.92E-06	0	0.000236	0.007395	2.229463
0	0	0	0	0
0	5.52E-06	7.24E-05	0.000333	0.772212
0	0.000146	0.004255	0.052362	45.38429
0	0	5.1E-05	4.83E-05	0.480482
0	0	0	0	0
0	3.47E-06	4.18E-05	0.000615	0.446234
0	1.1E-08	7.58E-05	0.000177	0.808294
0	0	2.52E-05	0.000498	0.237946
1.12E-06	1.81E-06	0.00017	0.000483	1.81804
2.47E-05	0	0.00049	0.010187	4.621371
0	0	0	0	0
0	0	0	0.001067	0.127313
2.5E-07	4.09E-07	3.44E-05	9.63E-05	0.366527

1.37E-06	0	4.57E-05	0.000764	0.43086
0	0	0	0	0
0	0	0	2.61E-05	0.002678
1.14E-06	9.68E-08	1.92E-05	0.000107	0.204775
1.46E-06	0	1.83E-05	0.000354	0.172578
0	0	0	0	0
0	0	0	0.000111	0.016108
0	5.12E-08	2.73E-05	0.000146	0.291154
0	0	4.13E-06	0.000123	0.038933
0	0	0	0	0
0	0	0	0.000219	0.023542

*This page is intentionally blank.*



## **Appendix D: Supplemental Biological Resources Information**

*This page is intentionally blank.*

### Special-Status Plants Known or Suspected to Occur in Marin County

Species	Status	Habitat
North Coast semaphore grass ( <i>Pleuropogon hooverianus</i> )	ST, 1B.1	Broadleafed upland forest, meadows and seeps, North Coast coniferous forest
Pacific Grove clover ( <i>Trifolium polyodon</i> )	SR, 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland
Mason's ceanothus ( <i>Ceanothus masonii</i> )	SR, 1B.2	Chaparral
Point Reyes blennosperma ( <i>Blennosperma nanum</i> var. <i>robustum</i> )	SR, 1B.2	Coastal prairie, coastal scrub
Mason's lilaeopsis ( <i>Lilaeopsis masonii</i> )	SR, 1B.1	Marshes and swamps, riparian scrub
Point Reyes meadowfoam ( <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i> )	SE, 1B.2	Coastal prairie, marshes and swamps, meadows and seeps, vernal pools
Marin western flax ( <i>Hesperolinon congestum</i> )	FT, ST, 1B.1	Chaparral, valley and foothill grassland; microhabitat is serpentinite
Tiburon mariposa-lily ( <i>Calochortus tiburonensis</i> )	FT, ST, 1B.1	Valley and foothill grassland
Santa Cruz tarplant ( <i>Holocarpha macradenia</i> )	FT, SE, 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland; microhabitat: clay (often), sandy soils
Tiburon paintbrush ( <i>Castilleja affinis</i> var. <i>neglecta</i> )	FE, ST, 1B.2	Valley and foothill grassland
Soft salty bird's-beak ( <i>Chloropyron molle</i> ssp. <i>molle</i> )	FE, SR, 1B.2	Marshes and swamps
Golden larkspur ( <i>Delphinium luteum</i> )	FE, SR, 1B.1	Chaparral, coastal prairie, coastal scrub; microhabitat: rocky substrate
Baker's larkspur ( <i>Delphinium bakeri</i> )	FE, SE, 1B.1	Broadleafed upland forest, coastal scrub, valley and foothill grassland; microhabitat: mesic conditions (often), shale
Beach layia ( <i>Layia carnosa</i> )	FE, SE, 1B.1	Coastal dunes, coastal scrub
Marsh sandwort ( <i>Arenaria paludicola</i> )	FE, SE, 1B.1	Marshes and swamps; microhabitat: openings, sandy
Sonoma spineflower ( <i>Chorizanthe valida</i> )	FE, SE, 1B.1	Coastal prairie
Tiburon jewelflower ( <i>Streptanthus glandulosus</i> ssp. <i>niger</i> )	FE, SE, 1B.1	Valley and foothill grassland
Tidestrom's lupin ( <i>Lupinus tidestromii</i> )	FE, SE, 1B.1	Coastal dunes
White-rayed pentachaeta ( <i>Pentachaeta bellidiflora</i> )	FE, SE, 1B.1	Cismontane woodland, Valley and foothill grassland

Species	Status	Habitat
Contra Costa goldfields ( <i>Lasthenia conjugens</i> )	FE, 1B.1	Cismontane woodland, playas, valley and foothill grassland, vernal pools; microhabitat: mesic conditions
Robust spineflower ( <i>Chorizanthe robusta</i> var. <i>robusta</i> )	FE, 1B.1	Coastal strand, northern coastal scrub, foothill woodland, dunes
Sonoma alopecurus ( <i>Alopecurus aequalis</i> var. <i>sonomensis</i> )	FE, 1B.1	Marshes and swamps, riparian scrub
Two-fork clover ( <i>Trifolium amoenum</i> )	FE, 1B.1	Coastal bluff scrub, valley and foothill grassland
Point Reyes paintbrush ( <i>Castilleja leschkeana</i> )	FE, 1A	Marshes and swamps
Island tube lichen ( <i>Hypogymnia schizidiata</i> )	1B.3	Chaparral, closed-cone coniferous forest
Koch's cord moss ( <i>Entosthodon kochii</i> )	1B.3	Cismontane woodland
Mt. Tamalpais manzanita ( <i>Arctostaphylos montana</i> ssp. <i>montana</i> )	1B.3	Chaparral, valley and foothill grassland; microhabitat: rocky substrate, serpentinite
Mt. Vision ceanothus ( <i>Ceanothus gloriosus</i> var. <i>porrectus</i> )	1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland
Tamalpais jewelflower ( <i>Streptanthus batrachopus</i> )	1B.3	Chaparral, closed-cone coniferous forest
Tamalpais oak ( <i>Quercus parvula</i> var. <i>tamalpaisensis</i> )	1B.3	Lower montane coniferous forest
Dark-eyed gilia ( <i>Gilia millefoliata</i> )	1B.2	Coastal dunes
Diablo helianthella ( <i>Helianthella castanea</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; microhabitat: azonal soils, partial shade (often), rocky (usually)
Baker's goldfields ( <i>Lasthenia californica</i> ssp. <i>bakeri</i> )	1B.2	Closed-cone coniferous forest, coastal scrub, marshes and swamps, meadows and seeps
Bent-flowered fiddleneck ( <i>Amsinckia lunaris</i> )	1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland
Blasdale's bent grass ( <i>Agrostis blasdalei</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Bluff wallflower ( <i>Erysimum concinnum</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Coastal bluff morning-glory ( <i>Calystegia purpurata</i> ssp. <i>saxicola</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, North Coast coniferous forest

Species	Status	Habitat
Coastal marsh milk-vetch ( <i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i> )	1B.2	Coastal dunes, coastal scrub, marshes and swamps
Coastal triquetrella ( <i>Triquetrella californica</i> )	1B.2	Coastal bluff scrub, coastal scrub
Congested-headed hayfield tarplant ( <i>Hemizonia congesta</i> <i>ssp. congesta</i> )	1B.2	Valley and foothill grassland; microhabitat: roadsides (sometimes)
Fragrant fritillary ( <i>Fritillaria liliacea</i> )	1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland; microhabitat: serpentinite (often)
Franciscan thistle ( <i>Cirsium andrewsii</i> )	1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; microhabitat: serpentinite (often)
Western leatherwood ( <i>Dirca occidentalis</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, North Coast coniferous forest, riparian forest, riparian woodland; microhabitat: mesic conditions
Short-leaved evax ( <i>Hesperevax sparsiflora</i> <i>var. brevifolia</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Humboldt Bay owl's-clover ( <i>Castilleja ambigua</i> <i>var. humboldtiensis</i> )	1B.2	Marshes and swamps
Marin County navarretia ( <i>Navarretia rosulata</i> )	1B.2	Chaparral, closed-cone coniferous forest
Marin manzanita ( <i>Arctostaphylos virgata</i> )	1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, North Coast coniferous forest; microhabitat: granitic (sometimes), sandstone (sometimes)
Marsh microseris ( <i>Microseris paludosa</i> )	1B.2	Cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland
Minute pocket moss ( <i>Fissidens pauperculus</i> )	1B.2	North Coast coniferous forest
Mt. Tamalpais bristly jewelflower ( <i>Streptanthus glandulosus</i> <i>ssp. pulchellus</i> )	1B.2	Chaparral, valley and foothill grassland
Mt. Tamalpais thistle ( <i>Cirsium hydrophilum</i> <i>var. vaseyi</i> )	1B.2	Broadleafed upland forest, chaparral, meadows and seeps; microhabitat: seeps, serpentinite
Napa false indigo ( <i>Amorpha californica</i> <i>var. napensis</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland
Nicasio ceanothus ( <i>Ceanothus decornutus</i> )	1B.2	Chaparral; microhabitat: clay (sometimes), rocky substrates, serpentinite

Species	Status	Habitat
North Coast phacelia ( <i>Phacelia insularis</i> var. <i>continentis</i> )	1B.2	Coastal bluff scrub, coastal dunes
Northern curly-leaved monardella ( <i>Monardella</i> <i>sinuata</i> ssp. <i>nigrescens</i> )	1B.2	Chaparral, coastal dunes, coastal scrub, lower montane coniferous forest; microhabitat: sandy soils
Perennial goldfields ( <i>Lasthenia californica</i> ssp. <i>macrantha</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub
Point Reyes checkerbloom ( <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i> )	1B.2	Marshes and swamps
Point Reyes horkelia ( <i>Horkelia marinensis</i> )	1B.2	Coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
Point Reyes salty bird's-beak ( <i>Chloropyron maritimum</i> ssp. <i>palustre</i> )	1B.2	Marshes and swamps
Purple-stemmed checkerbloom ( <i>Sidalcea malviflora</i> ssp. <i>purpurea</i> )	1B.2	Broadleafed upland forest, coastal prairie
Round-headed Chinese-houses ( <i>Collinsia corymbosa</i> )	1B.2	Coastal dunes
San Francisco Bay spineflower ( <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
San Francisco collinsia ( <i>Collinsia multicolor</i> )	1B.2	Closed-cone coniferous forest, coastal scrub; microhabitat: serpentinite (sometimes)
San Francisco owl's-clover ( <i>Triphysaria floribunda</i> )	1B.2	Coastal prairie, coastal scrub, valley and foothill grassland
Sanford's arrowhead ( <i>Sagittaria sanfordii</i> )	1B.2	Marshes and swamps
Santa Cruz microseris ( <i>Stebbinsoseris decipiens</i> )	1B.2	Broadleafed upland forest, chaparral, closed- cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland
Supple daisy ( <i>Erigeron supplex</i> )	1B.2	Coastal bluff scrub, coastal prairie
Swamp harebell ( <i>Campanula californica</i> )	1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, marshes and swamps, meadows and seeps, North Coast coniferous forest; microhabitat: mesic conditions
Tamalpais lessingia ( <i>Lessingia micradenia</i> var. <i>micradenia</i> )	1B.2	Chaparral, Valley and foothill grassland; microhabitat: roadsides (often), serpentinite (usually)
Thin-lobed horkelia ( <i>Horkelia tenuiloba</i> )	1B.2	Broadleafed upland forest, Chaparral, Valley and foothill grassland; microhabitat: mesic conditions, openings, sandy soils

Species	Status	Habitat
Tiburon buckwheat ( <i>Eriogonum luteolum</i> var. <i>caninum</i> )	1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; microhabitat: gravelly, sandy, serpentinite
Woolly-headed spineflower ( <i>Chorizanthe cuspidata</i> var. <i>villosa</i> )	1B.2	Coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
Baker's navarretia ( <i>Navarretia leucocephala</i> ssp. <i>bakeri</i> )	1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; microhabitat: mesic conditions
Blue coast gilia ( <i>Gilia capitata</i> ssp. <i>chamissonis</i> )	1B.1	Coastal dunes, coastal scrub
California beaked-rush ( <i>Rhynchospora californica</i> )	1B.1	Bogs and fens, lower montane coniferous forest, marshes and swamps, meadows and seeps
Coast lily ( <i>Lilium maritimum</i> )	1B.1	Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps, North Coast coniferous forest; microhabitat: roadsides (sometimes)
Kellogg's horkelia ( <i>Horkelia cuneata</i> var. <i>sericea</i> )	1B.1	Chaparral, closed-cone coniferous forest, coastal dunes, coastal scrub; microhabitat: gravelly (sometimes), openings, sandy (sometimes)
Marin checker lily ( <i>Fritillaria lanceolata</i> var. <i>tristulis</i> )	1B.1	Coastal bluff scrub, coastal prairie, coastal scrub
Marin checkerbloom ( <i>Sidalcea hickmanii</i> ssp. <i>viridis</i> )	1B.1	Chaparral
Mount Burdell jewelflower ( <i>Streptanthus anomalus</i> )	1B.1	Cismontane woodland; microhabitat: openings, serpentinite
Pink sand-verbena ( <i>Abronia umbellata</i> var. <i>breviflora</i> )	1B.1	Coastal dunes
Point Reyes rein orchid ( <i>Piperia elegans</i> ssp. <i>decurtata</i> )	1B.1	Coastal bluff scrub, coastal prairie
Raiche's red ribbons ( <i>Clarkia concinna</i> ssp. <i>raichei</i> )	1B.1	Coastal bluff scrub
Rose leptosiphon ( <i>Leptosiphon rosaceus</i> )	1B.1	Coastal bluff scrub
Coast yellow leptosiphon ( <i>Leptosiphon croceus</i> )	1B.1	Coastal prairie bluffs
Woolly-headed gilia ( <i>Gilia capitata</i> ssp. <i>tomentosa</i> )	1B.1	Coastal bluff scrub, Valley and foothill grassland; microhabitat: rocky substrates, serpentinite

Species	Status	Habitat
Mt. Tamalpais jewel-flower <i>Streptanthus glandulosus</i> ssp. <i>Pulchellus</i>	1B	Chaparral / grassland
Hairless popcornflower ( <i>Plagiobothrys glaber</i> )	1A	Marshes and swamps, meadows and seeps
Oval-leaved viburnum ( <i>Viburnum ellipticum</i> )	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest
Small groundcone ( <i>Kopsiopsis hookeri</i> )	2B.3	North Coast coniferous forest
Bristle-stalked sedge ( <i>Carex leptalea</i> )	2B.2	Bogs and fens, marshes and swamps, meadows and seeps
Lyngbye's sedge ( <i>Carex lyngbyei</i> )	2B.2	Marshes and swamps
Northern meadow sedge ( <i>Carex praticola</i> )	2B.2	Meadows and seeps
Oregon polemonium ( <i>Polemonium carneum</i> )	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest
Scouler's catchfly ( <i>Silene scouleri</i> ssp. <i>scouleri</i> )	2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland
Seaside bittercress ( <i>Cardamine angulata</i> )	2B.2	Lower montane coniferous forest, North Coast coniferous forest; microhabitat: streambanks
Water star-grass ( <i>Heteranthera dubia</i> )	2B.2	Marshes and swamps: microhabitat: alkaline
Bolander's water-hemlock ( <i>Cicuta maculata</i> var. <i>bolanderi</i> )	2B.1	Marshes and swamps
Thurber's reed grass ( <i>Calamagrostis crassiglumis</i> )	2B.1	Coastal scrub, marshes and swamps
Whiteworm lichen ( <i>Thamnolia vermicularis</i> )	2B.1	Chaparral, Valley and foothill grassland
Streamside daisy ( <i>Erigeron biolettii</i> )	3	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest; microhabitat: mesic conditions, rocky substrate
Woolly-headed lessingia ( <i>Lessingia hololeuca</i> )	3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; microhabitat: clay, serpentinite
Marin knotweed ( <i>Polygonum marinense</i> )	3.1	Marshes and swamps
Mt. Diablo cottonweed ( <i>Micropus amphibolus</i> )	3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland; microhabitat: rocky substrate
San Francisco gumplant ( <i>Grindelia hirsutula</i> var. <i>maritima</i> )	3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; microhabitat sandy (sometimes), serpentinite (sometimes)
Broad-lobed leptosiphon ( <i>Leptosiphon latisectus</i> )	4.3*	Broadleafed upland forest, cismontane woodland



Species	Status	Habitat
California bottle-brush grass ( <i>Elymus californicus</i> )	4.3*	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland
Coast rockcress ( <i>Arabis blepharophylla</i> )	4.3*	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; microhabitat: rocky substrates
Elongate copper moss ( <i>Mielichhoferia elongata</i> )	4.3*	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest; microhabitat: acidic (usually), carbonate (sometimes), metamorphic, roadsides (often), vernal mesic (usually)
Glory brush ( <i>Ceanothus gloriosus</i> var. <i>exaltatus</i> )	4.3*	Chaparral
Kern ceanothus ( <i>Ceanothus pinetorum</i> )	4.3*	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; microhabitat: Granitic, Rocky
Point Reyes ceanothus ( <i>Ceanothus gloriosus</i> var. <i>gloriosus</i> )	4.3*	Closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal scrub; microhabitat: sandy soils
Serpentine collomia ( <i>Collomia diversifolia</i> )	4.3*	Chaparral, cismontane woodland; microhabitat: gravelly (sometimes), rocky (sometimes), serpentinite (sometimes)
Serpentine reed grass ( <i>Calamagrostis ophitidis</i> )	4.3*	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; microhabitat: rocky substrates, serpentinite
Small spikerush ( <i>Eleocharis parvula</i> )	4.3*	Marshes and swamps
Beach starwort ( <i>Stellaria littoralis</i> )	4.2*	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps
Brewer's calandrinia ( <i>Calandrinia breweri</i> )	4.2*	Chaparral, coastal scrub; microhabitat: burned areas, disturbed areas, loam (sometimes), sandy (sometimes)
Brewer's milk-vetch ( <i>Astragalus breweri</i> )	4.2*	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; microhabitat: serpentinite (often), volcanic soils
Bristly leptosiphon ( <i>Leptosiphon acicularis</i> )	4.2*	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland
California lady's-slipper ( <i>Cypripedium californicum</i> )	4.2*	Bogs and fens, lower montane coniferous forest; microhabitat: seeps, serpentinite (usually), streambanks
Carlotta Hall's lace fern ( <i>Aspidotis carlotta-halliae</i> )	4.2*	Chaparral, cismontane woodland; microhabitat: serpentinite (usually)

Species	Status	Habitat
Coast iris ( <i>Iris longipetala</i> )	4.2*	Coastal prairie, lower montane coniferous forest, meadows and seeps; microhabitat: mesic conditions
Buxbaum's sedge ( <i>Carex buxbaumii</i> )	4.2*	Bogs and fens, marshes and swamps, meadows and seeps
Cotula navarretia ( <i>Navarretia cotulifolia</i> )	4.2*	Chaparral, cismontane woodland, valley and foothill grassland; microhabitat: adobe soils
Harlequin lotus ( <i>Hosackia gracilis</i> )	4.2*	Broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, North Coast coniferous forest, valley and foothill grassland; microhabitat: roadsides
Gairdner's yampah ( <i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> )	4.2*	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools
Johnny-nip ( <i>Castilleja ambigua</i> var. <i>ambigua</i> )	4.2*	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools
Large-flowered leptosiphon ( <i>Linanthus grandiflorus</i> )	4.2*	Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; sandy (usually)
Lobb's aquatic buttercup ( <i>Ranunculus lobbii</i> )	4.2*	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools
Marsh zigadenus ( <i>Toxicoscordion fontanum</i> )	4.2*	Chaparral, cismontane woodland, lower montane coniferous forest, marshes and swamps, meadows and seeps
Michael's rein orchid ( <i>Piperia michaelii</i> )	4.2*	Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest
Mt. Saint Helena morning-glory ( <i>Calystegia collina</i> ssp. <i>oxyphylla</i> )	4.2*	Chaparral, lower montane coniferous forest, valley and foothill grassland; microhabitat: serpentinite
Nodding semaphore grass ( <i>Pleuropogon refractus</i> )	4.2*	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest
Oakland star-tulip ( <i>Calochortus umbellatus</i> )	4.2*	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; microhabitat: serpentinite (often)
Ocean bluff milk-vetch ( <i>Astragalus nuttallii</i> var. <i>nuttallii</i> )	4.2*	Coastal bluff scrub, coastal dunes

Species	Status	Habitat
Pink star-tulip ( <i>Calochortus uniflorus</i> )	4.2*	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest
San Francisco wallflower ( <i>Erysimum franciscanum</i> )	4.2*	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; microhabitat: granitic (often), serpentinite (often)
Seaside cistanthe ( <i>Cistanthe maritima</i> )	4.2*	Coastal bluff scrub, coastal scrub, valley and foothill grassland; microhabitat: sandy soils
Southwestern spiny rush ( <i>Juncus acutus</i> ssp. <i>leopoldii</i> )	4.2*	Coastal dunes, Marshes and swamps, meadows and seeps
Western dichondra ( <i>Dichondra occidentalis</i> )	4.2*	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland

### Status Designations

#### Federal:

FE = Listed as endangered under the Federal Endangered Species Act  
 FT = Listed as threatened under the Federal Endangered Species Act

#### State:

SE = Listed as endangered under the California Endangered Species Act  
 ST = Listed as threatened under the California Endangered Species Act  
 SR = Listed as rare under the California Native Plant Protection Act

#### CRPR – CNPS Rare Plant Rank:

Rank 1A – Presumed extinct in California  
 Rank 1B – Rare, threatened, or endangered in California and elsewhere  
 Rank 2A – Plants presumed extirpated in California, but more common elsewhere  
 Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere  
 Rank 3 – Plants for which more information is needed – A review list  
 Rank 4 – Plants of limited distribution – A watch list  
 0.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)  
 0.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)  
 0.3- Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

\* = Species with an asterisk are considered to meet the definition of special-status because they are maintained on the CDFG list of Special Animals or Special Plants and have a CNDDDB Element Ranking of 3 or less, or the CDFG has indicated that they may be of a relatively common bird species but their communal roost locations are considered a sensitive resource by the CDFG.

## Special-Status Wildlife Species Known or Suspected to Occur in Marin County

Species	Status	Habitat
Fish		
Steelhead- central California coast Distinct Population Segment (DPS) population 8 ( <i>Oncorhynchus mykiss irideus</i> )	FT	Spawns in freshwater streams in gravel substrates in clear, cool, shady, perennial sections of relatively undisturbed streams.
coho salmon - central California coast ESU ( <i>Oncorhynchus kisutch</i> , population 4)	FE, SE	Spawns in small freshwater streams with dense canopy cover, and medium to small, clean gravel substrates.
Chinook Salmon Sacramento River winter-run population 7 ( <i>Oncorhynchus tshawytscha</i> )	FE, SE	Spawns in freshwater streams.
Green sturgeon Southern Distinct Population Segment ( <i>Acipenser medirostris</i> )	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.
Tidewater goby ( <i>Eucyclogobius newberryi</i> )	FE	Occupies brackish water, marsh/bays with fairly still but not stagnant water and high oxygen levels
Delta smelt ( <i>Hypomesus transpacificus</i> )	FT, SE	Spawn in shallow fresh or slightly brackish tidally influenced backwater sloughs and channel edges.
Longfin smelt ( <i>Spirinchus thaleichthys</i> )	FC, ST	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay. The larvae are swept downstream into brackish water.
Eulachon ( <i>Thaleichthys pacificus</i> )	FT	Spawns in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.
Central California roach ( <i>Hesperoleucus symmetricus symmetricus</i> )	CSSC	Coastal streams to mountain foothill streams; predominately found in small warm streams but are capable of thriving in larger colder streams with diverse conditions
Southern coastal roach ( <i>Hesperoleucus venustus subditus</i> )	CSSC	Found in small warm streams but also in larger colder streams with diverse conditions.
Pacific herring ( <i>Culpea pallasii</i> )	MLMA	Spawns in sheltered areas of bays, estuaries, and harbors, on a variety of substrates including submerged vegetation (e.g., eelgrass beds), cobble, and manmade structures such as pier pilings and riprap.
Invertebrates		
California freshwater shrimp ( <i>Syncaris pacifica</i> )	FE, SE	Occurs in low elevation-low gradient streams, generally with submerged undercut banks, overhanging plants, woody debris, and the exposed live root systems of willow or alder.
Black abalone ( <i>Haliotes cracheriodii</i> )	FE	Rocky intertidal zone and ocean waters
White abalone ( <i>Haliotes sorenseni</i> )	FE	Rocky intertidal zone and ocean waters
Mission blue butterfly ( <i>Icaricia icarioides missionensis</i> )	FE	Shrubs and grasslands with adult nectar plants larval food plants.

Species	Status	Habitat
Myrtle's silverspot butterfly ( <i>Speyeria zerene myrtleae</i> )	FE	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula in scrub/grassland with adult nectar plants larval food plants.
Monarch butterfly California overwintering population 1 ( <i>Danaus plexippus</i> )	FC	Overwinters on the branches and leaves of trees including Monterey pine ( <i>Pinus radiata</i> ), Monterey cypress ( <i>Cupressus maculata</i> ), and eucalyptus ( <i>Eucalyptus</i> sp.) in areas with appropriate sun exposure and thermal buffering.
Marin elfin butterfly ( <i>Callophrys mossii marinensis</i> )	*	Coastal, mountainous areas with grassy ground cover with adult nectar plants larval food plants.
Point Reyes blue butterfly ( <i>Icaricia icarioides parapheres</i> )	*	Stabilized sand dunes with adult nectar plants larval food plants.
Opler's longhorn moth ( <i>Adela oplerella</i> )	*	Valley & foothill grassland, serpentine
Crotch bumble bee ( <i>Bombus crotchii</i> )		Open grasslands and meadows with sufficient abundance and duration of floral resources for foraging; undisturbed soils, rodent and other animal burrows for nesting and overwintering sites.
Obscure bumble bee ( <i>Bombus caliginosus</i> )	*	Open grasslands and shrublands with sufficient abundance and duration of floral resources for foraging; nests underground in abandoned rodent burrows, and above-ground in tufts of grass, old bird nests, rock piles, or cavities in tree snags.
Western bumble bee ( <i>Bombus occidentalis occidentalis</i> )	*	Meadows and grasslands with sufficient abundance and duration of floral resources; underground rodent or other animal burrows for nesting; may overwinter in friable soils and plant litter or debris.
California linderiella ( <i>Linderiella occidentalis</i> )	*	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.
Hypoheic amphipod ( <i>Stygobromus hyporheicus</i> )	*	Aquatic habitat
Marin blind Harvestman ( <i>Calicina diminua</i> )	*	Serpentine endemic. Known only from the type locality, Mount Burdell in Novato.
Ubick's gnaphosid spider ( <i>Talanites ubicki</i> )	*	Serpentine endemic. Known only from the type locality, Mount Burdell in Novato.
San Francisco forktail damselfly ( <i>Ischnura gemina</i> )	*	Ponds and ditches
Bumblebee scarab beetle ( <i>Lichnanthe ursina</i> )	*	Slopes on coastal sand dunes near dune vegetation.
Tomales isopod ( <i>Caecidotea tomalensis</i> )	*	Freshwater ponds or streams with still or near-still water
Sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	*	Coastal dunes in areas adjacent to non-brackish water
Ricksecker's water scavenger beetle ( <i>Hydrochara rickseckeri</i> )	*	Aquatic habitat / pools and ponds, known only from Point Reyes headland
San Francisco Bay Area leaf-cutter bee ( <i>Trachusa gummifera</i> )	*	None available
Globose dune beetle ( <i>Coelus globosus</i> )	*	Foredunes and sand hummocks; burrows beneath the sand surface and is most common beneath dune vegetation.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>
Robust walker ( <i>Pomatiopsis binneyi</i> )	*	Freshwater wetland and streams under leaf litter
Pacific walker ( <i>Pomatiopsis californica</i> )	*	Freshwater habitats
Peninsula coast range shoulderband ( <i>Helminthoglypta nickliniana awania</i> )	*	Coastal scrub habitat and weedy pastures; uniquely adapted to high winds, salt fog, and variable precipitation.
Williams' bronze shoulderband ( <i>Helminthoglypta stiversiana williamsi</i> )	*	Known only from Hog Island and Duck Island, two small, tree-covered islands in Tomales Bay, Marin County.
mimic tryonia (=California brackishwater snail) ( <i>Tryonia imitator</i> )	*	Aquatic, brackish marsh, estuary, lagoon, marsh & swamp, alt marsh, wetland
Tiburon micro-blind harvestman ( <i>Microcina tiburona</i> )	*	Serpentine outcrops near spring/seeps.
Mimic tryonia (=California brackishwater snail) ( <i>Tryonia imitator</i> )	*	Coastal lagoons / estuaries / salt marshes
Marin hesperian ( <i>Vespericola marinensis</i> )	*	Chaparral, meadow & seep, north coast coniferous forest, riparian woodland, found under leaves of cow-parsnip, around spring seeps, in leafmold along streams, in alder woods and mixed evergreen forest.
<b>Amphibians</b>		
California red-legged frog ( <i>Rana draytonii</i> )	FT, CSSC	Inhabits lowlands and foothills in or near permanent or nearly permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Estivates in animal burrows, woody debris, and other moist refuges.
Northern red-legged frog ( <i>Rana aurora</i> )	CSSC	Forests / woodlands / grasslands along streamsides
Foothill yellow-legged frog ( <i>Rana boylei</i> )	SE, CSSC	Inhabits partly shaded, shallow streams and rifles with a rocky substrate in valley and foothill hardwood, riparian, mixed conifer, coastal scrub, mixed chaparral, and wet meadows.
California tiger salamander Sonoma County DPS ( <i>Ambystoma californiense</i> , pop. 3)	FE, ST	Vernal or temporary pools in annual grasslands or open woodlands.
California giant salamander ( <i>Dicamptodon ensatus</i> )	CSSC	Adults occur in wet forests under rocks and logs near streams and lakes. Larvae found in cold, clear streams, occasionally in lakes and ponds.
Western spadefoot toad ( <i>Spea hammondi</i> )	CSSC	Grasslands / open woodlands with seasonal pools
<b>Reptiles</b>		
Northwestern pond turtle ( <i>Emys marmorata</i> )	CSSC	Ponds, marshes, rivers, streams, and irrigation canals. Requires basking sites. Nests in upland habitats, in clay or silty soils typically within 600 feet of aquatic habitat.
California horned lizard ( <i>Phrynosoma coronatum frontale</i> )	CSSC	Forests / woodlands / grasslands with loose soil
Green sea turtle ( <i>Chelonia mydas</i> )	FT	Open ocean
Loggerhead sea turtle ( <i>Caretta caretta</i> )	FE	Open ocean

Species	Status	Habitat
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	FE	Open ocean
Olive (=Pacific) ridley sea turtle ( <i>Lepidochelys olivacea</i> )	FT	Open ocean
Birds		
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	FT, ST	Dense forest and woodland habitats. Breeding sites include trees or snag cavities or broken tops of large trees.
Swainson's hawk ( <i>Buteo swainsoni</i> )	ST	Large, open grasslands with suitable nest trees such as oaks or cottonwoods in or near riparian habitats; forages in grasslands, lightly grazed pastures/crops, irrigated pastures, and grain fields.
Osprey ( <i>Pandion haliaetus</i> )	CSSC (nesting)	Nesting in trees associated with waterbodies
Western yellow-billed cuckoo ( <i>Coccyzus americanus occidentalis</i> )	FT, SE	Require dense wooded habitat with water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.
California least tern ( <i>Sterna antillarum browni</i> )	FE, SE	Nests along the coast on bare or sparsely vegetated, flat substrates.
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	SE, CFP	Nests within one mile of water often by lake margins, near rivers or along the ocean shoreline. Nests in large, dominant trees with open branches.
White-tailed kite ( <i>Elanus leucurus</i> )	CFP	Nests in open grasslands/marshlands with scattered trees. Forages in grasslands, marshes, and ruderal habitats.
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	CFP	Nests on ledges and caves on steep cliffs, and on human-made structures such as electrical transmission lines, building ledges, and bridges.
Golden eagle ( <i>Aquila chrysaetos</i> )	CFP	Nests in cliff-walled canyons and large trees in open areas.
Tricolored blackbird ( <i>Agelaius tricolor</i> )	ST, SSC	Nests in freshwater marsh in tall wetland vegetation and nearby upland areas with tall herbaceous species. Often nests near fresh water.
Northern harrier ( <i>Circus hudsonius</i> )	CSSC (nesting)	Nests in marsh and low shrubs.
Long-eared owl ( <i>Asio otus</i> )	CSSC (nesting)	Dense riparian and coast live oak ( <i>Quercus agrifolia</i> ) thickets near meadow edges, and nearby woodland and forest habitats, and sometimes dense conifer stands at higher elevations.
Burrowing owl ( <i>Athene cunicularia</i> )	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels ( <i>Spermophilus beecheyi</i> ).
Short-eared owl ( <i>Asio flammeus</i> )	CSSC	Found in marshes, lowland meadows, and irrigated alfalfa fields. Tule patches or dense grass needed for nesting and cover.
Salt marsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	CSSC	Breeds in tall herbaceous vegetation usually in brackish marshes and freshwater marshes. May nest in salt marshes with tall vegetation.
San Pablo song sparrow ( <i>Melospiza melodia samuelis</i> )	CSSC	Tidal, brackish or salt marshes.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>
Bryant's savannah sparrow ( <i>Passerculus sandwichensis alaudinus</i> )	CSSC	Moist coastal upland grasslands within and just above the fog belt in salt marshes and Bayshore areas in pickleweed, pickleweed-grassland ecotone, and above cordgrass stands.
Yellow warbler ( <i>Setophaga petechia</i> )	CSSC	Nests in riparian habitat with mature canopy and dense shrubby understory.
Vaux's Swift ( <i>Chaetura vauxi</i> )	CSSC (nesting)	Nests in cavities in redwoods and other trees, and occasionally in artificial cavities such as chimneys.
Black swift ( <i>Cypseloides niger</i> ) (nesting)	CSSC	Nesting on cliffs and behind falls
Purple martin ( <i>Progne subis</i> )	CSSC (nesting)	Inhabits woodlands, low elevation coniferous forest. Nests in old woodpecker cavities, or human-made structures, tree snags.
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	CSSC (nesting)	Open grasslands, fields, and woodlands. Typically nests in dense willow thickets, blackberry brambles, and eucalyptus trees, among other species.
Grasshopper sparrow ( <i>Ammodramus savannarum</i> )	CSSC (nesting)	Nests in extensive open, meadows, fallow fields, and pastures with native bunchgrasses or annual grasses, with scattered shrubs for perching and singing. Requires bare ground in nesting habitat to escape predators and to forage.
San Pablo song sparrow ( <i>Melospiza melodia samuelis</i> )	CSSC	Tidal salt marsh. Requires dense vegetation for nesting sites, song perches, and cover from predators.
Western snowy plover ( <i>Charadrius nivosus nivosus</i> )	FT, CSSC	Nests on sand spits, dune-backed beaches, lagoon margins, and bluff-backed beaches.
Yellow rail ( <i>Coturnicops noveboracensis</i> )	CSSC	Require sedge marshes/meadows with moist soil or shallow standing water (CDFW).
California black rail ( <i>Laterallus jamaicensis coturniculus</i> )	ST, FP	High marsh in coastal and inland areas. Nests primarily in pickleweed and cordgrass marshes.
California Ridgway's rail ( <i>Rallus obsoletus obsoletus</i> )	FE, SE, CFP	Salt and brackish marshes with dense vegetation, intertidal mudflats, and intersected by tidal sloughs and secondary channels.
Great egret ( <i>Ardea alba</i> ) (rookery)	*	Nests colonially large trees
Great blue heron ( <i>Ardea herodias</i> ) (rookery)	*	Nests colonially in trees, cliff-sides, marshes
Snowy egret ( <i>Egretta thula</i> ) (rookery)	*	Nests colonially in trees, cliff-sides, near marshland
Black-crowned night-heron ( <i>Nycticorax nycticorax</i> ) (rookery)	*	Nests colonially in trees / shrubs near marshland
California brown pelican ( <i>Pelecanus occidentalis californicus</i> )	CFP	Coastal / bay shorelines and open water
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	FT, SE	Old growth forest / coastal estuaries / open ocean
Tufted puffin ( <i>Fratercula cirrhata</i> )	CSSC	Colonial nester on off-shore islands / cliffs
Short-tailed albatross ( <i>Phoebastria albatrus</i> )	FE	Forages widely across the north Pacific. Nests on two islands in Japan. Known from waters off the coast in Marin County.
Ashy storm-petrel ( <i>Hydrobates homochroa</i> ) (rookery)	CSSC	Nests colonially on off-shore islands
Mammals		



Species	Status	Habitat
Salt marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	FE, SE, CFP	Diked and tidal wetlands supporting a mix of halophytic vegetation.
Southern sea otter ( <i>Enhydra lutris nereis</i> )	FT, FP, MMC	Protected deepwater coastal communities; needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.
Point Reyes jumping mouse ( <i>Zapus trinotatus orarius</i> )	CSSC	Primarily in bunch grass marshes on the uplands of Point Reyes. Also present in coastal scrub, grassland, and meadows.
Stellar sea lion - western population ( <i>Eumetopias jubatus</i> )	FE, MMC	Open ocean, beaches.
Guadalupe fur seal ( <i>Arctocephalus townsendi</i> )	FT, ST, FP	Open ocean, beaches.
Angel Island mole ( <i>Scapanus latimanus isularis</i> )	*	Coastal scrub / prairie on Angel Island
American badger ( <i>Taxidea taxus</i> )	CSSC	Open grassland or grassland/sparse shrubby habitats with friable soils. Infrequently found in disked agricultural areas.
Point Reyes mountain beaver ( <i>Aplodontia rufa phaea</i> )	CSSC	North-facing slopes in moderately dense coastal scrub and sometimes in openings of Bishop pine ( <i>Pinus muricata</i> ) or Douglas fir ( <i>Pseudotsuga menziesii</i> ) forests.
Pallid bat ( <i>Antrozous pallidus</i> )	CSSC	Roosts in caves, rock outcrops, buildings, bridges, and trees hollows, cavities, and crevices. Forages over a variety of habitats.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	CSSC	Roosts in caves, lava tubes, mine tunnels, and occasionally in basal hollows of trees such as redwoods, abandoned buildings, bridges with cave-like in a variety of habitats.
Western red bat ( <i>Lasiurus blossevillii</i> )	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.
Greater western mastiff-bat ( <i>Eumops perotis californicus</i> )	CSSC	Cliff-dwelling species, roost in exfoliating rock slabs (e.g., granite, sandstone or columnar basalt), crevices in large boulders and buildings high above the ground
Silver-haired bat ( <i>Lasionycteris noctivagans</i> )	*	Primarily roosts in trees, rarely in tree hollows, cavities, and behind loose bark of large diameter trees and snags
Hoary bat ( <i>Lasiurus cinereus</i> )	*	Roosts primarily in foliage of both coniferous and deciduous trees, usually on the edge of clearings, atypical non-tree roosts (e.g., include tree cavities, squirrel nests, side of a building)
Long-eared myotis bat ( <i>Myotis evotis</i> )	*	Semiarid shrublands, sage, chaparral, and agricultural areas, and coniferous forests in exfoliating tree bark, tree hollows, mines, cliff crevices, rocky outcrops, buildings and bridges
Fringed myotis bat ( <i>Myotis thysanodes</i> )	*	Roosts in crevices in buildings, underground mines, rocks, cliff faces, and bridges, trees and snags
Long-legged myotis bat ( <i>Myotis volans</i> )	*	Roosts in abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags caves and mine tunnels
Yuma myotis bat ( <i>Myotis yumanensis</i> )	*	Riparian obligate; roosts in bridges, buildings, cliff crevices, caves, mines, and trees.

\*Status Designations

Federal: FE = Listed as endangered under the Federal Endangered Species Act  
FT = Listed as threatened under the Federal Endangered Species Act

FC = Candidate for listing under the Federal Endangered Species Act

State:

SE = Listed as endangered under the California Endangered Species Act

ST = Listed as threatened under the California Endangered Species Act

SC = Candidate for listing under the California Endangered Species Act

CSSC = California Species of Special Concern

CFP = California Fully Protected Species

MLMA = Marine Life Management Act State Regulated Fishery

MMCM = Marine Mammal Commission: Marine Mammal Species of Special Concern

\*Species with an asterisk are considered to meet the definition of special-status because they are maintained on the CDFG list of Special Animals or Special Plants and have a CNDDDB Element Ranking of 3 or less, or the CDFG has indicated that they may be of a relatively common bird species but their communal roost locations are considered a sensitive resource by the CDFG.

## **Appendix E: Supplemental Historical Resources Information**

*This page is intentionally blank.*

State Historical Resources Commission, California Register of Historic Places (CRHR)  
**CALIFORNIA HISTORICAL RESOURCES—MARIN COUNTY<sup>1</sup>**

<b>Name and Landmark Plaque Number</b>	<b>City/County</b>	<b>Date Listed</b>	<b>Type</b>
Alexander Bailey House "The Gables" (P674)	Inverness	9/2/86	PI
Alexander-Acacia Bridge (N1262)	Larkspur	1/5/84	NR
Angel Island (529)	Angel Island	3/7/55	CR
Angel Island, U.S. Immigration Station (N118)	Tiburon	10/14/71	NR
Barrett, William G., House (N881)	Sausalito	6/17/80	NR
Boyd House (N317)	San Rafael	12/17/74	NR
Bradford House (N871)	San Rafael	6/6/80	NR
Camilo Ynitia Adobe (210)	Novato	6/20/35	CR
China Camp (924)	Santa Venetia	12/7/78	CR
China Camp (N765)	San Rafael	4/26/79	NR
Dixie Schoolhouse (N199)	San Rafael	12/26/72	NR
Dollar, Robert, Estate (N195)	San Rafael	12/11/72	NR
Dollar, Robert, House (N1705)	San Rafael	7/23/91	NR, PI
Dolliver House (N612)	Larkspur	5/22/78	NR
Fashion Shop and Stephen Porcella House (N886)	Novato	6/25/80	NR
First Sawmill in Marin County (207)	Marin County	6/20/35	CR
Forts Baker, Barry, and Cronkhite (N267)	Sausalito	12/12/73	NR
Golden Gate Bridge (974)	Marin County	6/18/87	CR
Green Brae Brick Kiln (917)	Larkspur	1/31/78	CR
Green Brae Brick Yard (N565)	Larkspur	3/24/78	NR
Griswold House (N1377)	Sausalito	9/12/85	NR
Hamilton Army Air Field Discontiguous Historic District (N2039)	Novato	11/20/98	NR
Home of Lord Charles Snowden Fairfax (679)	Fairfax	5/11/59	CR
Larkspur Downtown Historic District (N1136)	Larkspur	10/7/82	NR
Lime Kilns (222)	Olema	6/20/35	CR
Lyford's Stone Tower (N454)	Tiburon	12/2/76	NR
Lyford, Benjamin and Hilarita, House (N2110)	Tiburon	11/10/2000	NR
Marin County Civic Center (999)	San Rafael	5/8/91	NR, CR
McNear, Erskine, B., House (N988)	San Rafael	1/11/82	NR
Miller Creek School Indian Mound (N119)	San Rafael	10/14/71	NR
Mission San Rafael Arcángel (220)	San Rafael	6/20/35	CR
Muir Beach Archeological Site (N937)	Marin City	1/26/81	NR
Old St. Hilary's Church (P92)	Tiburon	6/7/68	PI
Olema Lime Kilns (N441)	Olema	10/8/76	NR
Outdoor Art Club (922)	Mill Valley	10/15/78	NR, CR
Pierce Ranch (N1406)	Inverness	12/6/85	NR
Pioneer Memorial Cemetery (P785)	Novato	5/19/93	PI

<b>Name and Landmark Plaque Number</b>	<b>City/County</b>	<b>Date Listed</b>	<b>Type</b>
Pioneer Paper Mill (552),	Lagunitas	6/4/56	CR
Plaza Vina del Mar (P476)	Sausalito	4/2/76	PI
Point Bonita Light Station (N1721)	Sausalito	9/3/91	NR
Point Reyes Lifeboat Rescue Station, 1927 (N1402)	Inverness	11/7/85	NR
Point Reyes Light Station (N1722)	Point Reyes	9/3/91	NR
Rancho Olompali (N202)	Novato	1/12/73	NR
Rey, Valentine, House (N1093)	Belvedere	4/22/82	NR
San Francisco and North Pacific Railroad Station House--Depot (N1916)	Tiburon	8/4/95	NR
San Rafael Improvement Club (N1274)	San Rafael	3/29/84	NR
Sausalito Woman's Club (N1827)	Sausalito	4/15/93	NR
Schreiber, Brock, Boathouse and Beach (N640)	Inverness	7/7/78	NR
Site of the Lighter Wharf at Bolinas (221)	Bolinas	6/20/35	CR
St. Vincent's School for Boys (630)	San Rafael	1/29/58	CR
Station KPH Operating Station (N1604)	Marshall	7/24/89	NR
Station KPH, Marconi Wireless Telegraph Company of America (N1605)	Marshall	7/24/89	NR
Steamship Tennessee Remains (N956)	Marin City	4/15/81	NR
Tomales Presbyterian Church and Cemetery (N381)	Tomales	8/1/75	NR
Vina Del Mar Park Plaza and Fountain (P477)	Sausalito	4/2/76	PI

SOURCE: State of California, Office of Historic Preservation, June 2022.  
[web site: <https://ohp.parks.ca.gov/listedresources/>, accessed 6/5/22]

Type:

NR = National Register of Historic Places

CR = California Register of Historical Resources

PI = Point of Interest

<sup>1</sup> The resources in this table were listed by the State Historical Resources Commission and may not include all resources listed in the CRHR; the appropriate regional Information Center should be contacted for a complete list of Marin County resources listed in the CRHR.

Reference Number	Property Name	Status	Request Type	Restricted Address	Category of Property	State
82002203	Rey, Valentine, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
100002108	Marconi-RCA Bolinas Transmitting Station	Listed	Single	FALSE	district	CALIFORNIA
78000702	Schreiber, Brock, Boathouse and Beach	Listed	Single	FALSE	BUILDING	CALIFORNIA
85002756	Point Reyes Lifeboat Rescue Station, 1927	Listed	Single	FALSE	DISTRICT	CALIFORNIA
85003324	Pierce Ranch	Listed	Single	FALSE	DISTRICT	CALIFORNIA
100002109	RCA Point Reyes Receiving Station	Listed	Single	FALSE	district	CALIFORNIA
100002147	Point Reyes Peninsula Dairy Ranches Historic District	Listed	Resubmission	FALSE	district	CALIFORNIA
100002619	Point Reyes Naval Radio Compass Station	Listed	Single	FALSE	building	CALIFORNIA
78000703	Dolliver House	Listed	Single	FALSE	BUILDING	CALIFORNIA
78000704	Green Brae Brick Yard	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
82000972	Larkspur Downtown Historic District	Listed	Single	FALSE	DISTRICT	CALIFORNIA
84000903	Alexander-Acacia Bridge	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
81000097	Muir Beach Archeological Site	Listed	Single	TRUE	SITE	CALIFORNIA
81000102	Steamship TENNESSEE Remains	Listed	Single	TRUE	SITE	CALIFORNIA
100001604	Marin City Public Housing	Listed	Single	FALSE	district	CALIFORNIA
88003223	Station KPH, Marconi Wireless Telegraph Company of America	Listed	Single	FALSE	DISTRICT	CALIFORNIA
89000819	Station KPH Operating Station	Listed	Single	FALSE	BUILDING	CALIFORNIA
07001396	Muir Woods National Monument	Listed	Single	FALSE	DISTRICT	CALIFORNIA
11000934	West Point Inn	Listed	Single	FALSE	BUILDING	CALIFORNIA
14001234	Mount Tamalpais Mountain Theater	Listed	Multiple	FALSE	STRUCTURE	CALIFORNIA
78000705	Outdoor Art Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
10000356	Dipsea Trail, The	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
73000409	Rancho Olompali	Listed	Single	TRUE	SITE	CALIFORNIA
80000817	Fashion Shop and Stephen Porcella House	Listed	Single	FALSE	BUILDING	CALIFORNIA
98001347	Hamilton Army Air Field Discontiguous Historic District	Listed	Single	FALSE	DISTRICT	CALIFORNIA
76000217	Olema Lime Kilns	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
100002286	Olema Valley Dairy Ranches Historic District	Listed	Single	FALSE	district	CALIFORNIA
91001100	Point Reyes Light Station	Listed	Multiple	FALSE	DISTRICT	CALIFORNIA
12001006	Drakes Bay Historic and Archeological District	Listed	Single	TRUE	DISTRICT	CALIFORNIA
71000163	Miller Creek School Indian Mound	Listed	Single	TRUE	SITE	CALIFORNIA
72000236	Dixie Schoolhouse	Listed	Single	FALSE	BUILDING	CALIFORNIA
72000237	Dollar, Robert, Estate	Listed	Single	FALSE	BUILDING	CALIFORNIA
74000528	Boyd House	Listed	Single	FALSE	BUILDING	CALIFORNIA
79000493	China Camp	Listed	Single	FALSE	DISTRICT	CALIFORNIA
80000818	Bradford House	Listed	Single	FALSE	BUILDING	CALIFORNIA
82002204	McNear, Erskine, B., House	Listed	Single	FALSE	BUILDING	CALIFORNIA
84000907	San Rafael Improvement Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
91000920	Dollar, Robert, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
91002055	Marin County Civic Center	Listed	Single	FALSE	BUILDING	CALIFORNIA
16000865	Marinship Machine Shop	Listed	Single	FALSE	building	CALIFORNIA
73000255	Forts Baker, Barry, and Cronkhite	Listed	Single	FALSE	DISTRICT	CALIFORNIA
80004490	Barrett, William G., House	Listed	Single	FALSE	BUILDING	CALIFORNIA
85002306	Griswold House	Listed	Single	FALSE	BUILDING	CALIFORNIA
91001099	Point Bonita Light Station	Listed	Multiple	FALSE	DISTRICT	CALIFORNIA
93000272	Sausalito Woman's Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
00001268	Lyford, Benjamin and Hilarita, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
71000164	Angel Island, U.S. Immigration Station	Listed	Single	FALSE	DISTRICT	CALIFORNIA
76000497	Lyford's Stone Tower	Listed	Single	FALSE	BUILDING	CALIFORNIA
95000997	San Francisco and North Pacific Railroad Station House-Depot	Listed	Single	FALSE	BUILDING	CALIFORNIA
100004935	St. Hilary's Mission Church	Listed	Single	FALSE	building	CALIFORNIA
100002959	Tocaloma Bridge	Listed	Single	FALSE	structure	CALIFORNIA
75000437	Tomales Presbyterian Church and Cemetery	Listed	Single	FALSE	BUILDING	CALIFORNIA

County	City	Street & Number	External Link
Marin	Belvedere	428 Golden Gate Ave.	<a href="https://catalog.archives.gov/id/123859705">https://catalog.archives.gov/id/123859705</a>
Marin	Bolinas	Mesa Road; Point Reyes National Seashore.	
Marin	Inverness	12830 Sir Francis Drake Blvd.	<a href="https://catalog.archives.gov/id/123859713">https://catalog.archives.gov/id/123859713</a>
Marin	Inverness	Drake's Bay, Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123857956">https://catalog.archives.gov/id/123857956</a>
Marin	Inverness	Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123859700">https://catalog.archives.gov/id/123859700</a>
Marin	Inverness	17400 Sir Francis Drake Blvd.; Point Reyes National Seashore	
Marin	Inverness	Point Reyes NS	
Marin	Inverness	23250 Sir Francis Drake Blvd.	
Marin	Larkspur	58 Madrone Ave.	<a href="https://catalog.archives.gov/id/123859672">https://catalog.archives.gov/id/123859672</a>
Marin	Larkspur	125 E. Sir Francis Drake Blvd.	<a href="https://catalog.archives.gov/id/123859678">https://catalog.archives.gov/id/123859678</a>
Marin	Larkspur	234-552 1/2 Magnolia Ave.	<a href="https://catalog.archives.gov/id/123859684">https://catalog.archives.gov/id/123859684</a>
Marin	Larkspur	Alexander Ave. between Acacia and Monte Vista Aves.	<a href="https://catalog.archives.gov/id/123859652">https://catalog.archives.gov/id/123859652</a>
Marin	Marin City	Address Restricted	
Marin	Marin City	Address Restricted	
Marin	Marin City	101-429 Drake Ave., 1-99 Cole Dr.	
Marin	Marshall	18500 CA 1	<a href="https://catalog.archives.gov/id/123859717">https://catalog.archives.gov/id/123859717</a>
Marin	Marshall	18500 CA 1	<a href="https://catalog.archives.gov/id/123859715">https://catalog.archives.gov/id/123859715</a>
Marin	Mill Valley	Muir Woods Rd.	<a href="https://catalog.archives.gov/id/123859694">https://catalog.archives.gov/id/123859694</a>
Marin	Mill Valley	Old RR grade, Mt. Tamalpais	<a href="https://catalog.archives.gov/id/123859722">https://catalog.archives.gov/id/123859722</a>
Marin	Mill Valley	3801 Panoramic Hwy.	
Marin	Mill Valley	1 W. Blithedale Ave.	<a href="https://catalog.archives.gov/id/123859698">https://catalog.archives.gov/id/123859698</a>
Marin	Mill Valley and Stinson Beach	Throckmorton Ave, Sequoia Valley Rd., Panoramic Hwy., State Rt 1, Muir Woods National Monument, Golden Gate	<a href="https://catalog.archives.gov/id/123859664">https://catalog.archives.gov/id/123859664</a>
Marin	Novato	Address Restricted	
Marin	Novato	800 Grant Ave. and 1009 Reichert Ave.	<a href="https://catalog.archives.gov/id/123859674">https://catalog.archives.gov/id/123859674</a>
Marin	Novato	Mostly the SW part of Hamilton Army Air Field	<a href="https://catalog.archives.gov/id/123859682">https://catalog.archives.gov/id/123859682</a>
Marin	Olema	4 mi. SE of Olema on CA 1	<a href="https://catalog.archives.gov/id/123859696">https://catalog.archives.gov/id/123859696</a>
Marin	Olema	Point Reyes NS & Golden Gate NRA	
Marin	Point Reyes	Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123857643">https://catalog.archives.gov/id/123857643</a>
Marin	Point Reyes Station	Address Restricted	
Marin	San Rafael	Address Restricted	
Marin	San Rafael	2255 Las Gallinas Ave.	<a href="https://catalog.archives.gov/id/123859666">https://catalog.archives.gov/id/123859666</a>
Marin	San Rafael	1408 Mission Ave.	<a href="https://catalog.archives.gov/id/123859668">https://catalog.archives.gov/id/123859668</a>
Marin	San Rafael	1125 B St.	<a href="https://catalog.archives.gov/id/123859658">https://catalog.archives.gov/id/123859658</a>
Marin	San Rafael	247 N. San Pedro Dr.	<a href="https://catalog.archives.gov/id/123859662">https://catalog.archives.gov/id/123859662</a>
Marin	San Rafael	333 G St.	<a href="https://catalog.archives.gov/id/123859660">https://catalog.archives.gov/id/123859660</a>
Marin	San Rafael	121 Knight Dr.	<a href="https://catalog.archives.gov/id/123859690">https://catalog.archives.gov/id/123859690</a>
Marin	San Rafael	1800 5th Ave.	<a href="https://catalog.archives.gov/id/123859709">https://catalog.archives.gov/id/123859709</a>
Marin	San Rafael	115 J St.	<a href="https://catalog.archives.gov/id/123859670">https://catalog.archives.gov/id/123859670</a>
Marin	San Rafael	Jct. of N. San Pedro Rd. and Civic Center Dr.	<a href="https://catalog.archives.gov/id/123857954">https://catalog.archives.gov/id/123857954</a>
Marin	Sausalito	25 Liberty Ship Way	
Marin	Sausalito	S of Sausalito off U.S. 101	<a href="https://catalog.archives.gov/id/123859676">https://catalog.archives.gov/id/123859676</a>
Marin	Sausalito	156 Bulkley	<a href="https://catalog.archives.gov/id/123859656">https://catalog.archives.gov/id/123859656</a>
Marin	Sausalito	639 Main St.	<a href="https://catalog.archives.gov/id/123859680">https://catalog.archives.gov/id/123859680</a>
Marin	Sausalito	Point Bonita	<a href="https://catalog.archives.gov/id/123857641">https://catalog.archives.gov/id/123857641</a>
Marin	Sausalito	120 Central Ave.	<a href="https://catalog.archives.gov/id/123859711">https://catalog.archives.gov/id/123859711</a>
Marin	Tiburon	376 Greenwood Beach Rd.	<a href="https://catalog.archives.gov/id/123859686">https://catalog.archives.gov/id/123859686</a>
Marin	Tiburon	SE of Tiburon in San Francisco Bay	<a href="https://catalog.archives.gov/id/123859654">https://catalog.archives.gov/id/123859654</a>
Marin	Tiburon	2034 Paradise Dr.	<a href="https://catalog.archives.gov/id/123859688">https://catalog.archives.gov/id/123859688</a>
Marin	Tiburon	1920 Paradise Dr.	<a href="https://catalog.archives.gov/id/123859707">https://catalog.archives.gov/id/123859707</a>
Marin	Tiburon	201 Esperanza St.	
Marin	Tocaloma	Old segment of Sir Francis Drake Blvd. across Lagunitas Cr.	
Marin	Tomaes	11 Church St.	<a href="https://catalog.archives.gov/id/123859720">https://catalog.archives.gov/id/123859720</a>



Federal Agencies	Level of Significance - International	Level of Significance - Local	Level of Significance - National	Level of Significance - Not Indicated	Level of Significance - State	Listed Date
	False	False	False	False	True	4/22/1982
NATIONAL PARK SERVICE	False	True	True	False	False	2/23/2018
	False	True	False	False	False	7/7/1978
NATIONAL PARK SERVICE	False	False	True	False	True	11/7/1985
NATIONAL PARK SERVICE	False	False	False	False	True	12/6/1985
NATIONAL PARK SERVICE	False	True	True	False	False	2/23/2018
NATIONAL PARK SERVICE	False	True	False	False	False	10/29/2018
NATIONAL PARK SERVICE	False	True	False	False	False	6/29/2018
	False	True	False	False	False	5/22/1978
	False	False	False	False	True	3/24/1978
	False	True	False	False	False	10/7/1982
	False	True	False	False	False	1/5/1984
NATIONAL PARK SERVICE	False	True	False	False	False	1/26/1981
NATIONAL PARK SERVICE	False	True	False	False	False	4/15/1981
	False	True	False	False	False	9/18/2017
	False	False	True	False	False	7/24/1989
	False	False	True	False	False	7/24/1989
NATIONAL PARK SERVICE	False	False	True	False	False	1/9/2008
	False	True	False	False	False	12/22/2011
	False	True	False	False	False	2/2/2015
	False	True	False	False	False	11/16/1978
NATIONAL PARK SERVICE	False	True	False	False	False	6/4/2010
	False	False	False	False	True	1/12/1973
	False	True	False	False	False	6/25/1980
DEPARTMENT OF THE NAVY	False	True	False	False	False	11/20/1998
NATIONAL PARK SERVICE	False	False	False	False	True	10/8/1976
NATIONAL PARK SERVICE	False	True	False	False	False	4/9/2018
COAST GUARD	False	False	False	False	True	9/3/1991
	False	False	True	False	False	10/16/2012
	False	False	False	False	True	10/14/1971
	False	True	False	False	False	12/26/1972
	False	True	False	False	False	12/11/1972
	False	True	False	False	False	12/17/1974
	False	False	True	False	False	4/26/1979
	False	True	False	False	False	6/6/1980
	False	True	False	False	False	1/11/1982
	False	True	False	False	False	3/29/1984
	False	True	False	False	False	7/23/1991
U.S. POSTAL SERVICE	False	False	True	False	False	7/17/1991
	False	True	False	False	False	12/20/2016
NATIONAL PARK SERVICE; DEPARTMENT OF THE ARM	False	False	False	False	True	12/12/1973
	False	True	False	False	False	6/17/1980
	False	True	False	False	False	9/12/1985
COAST GUARD	False	False	False	False	True	9/3/1991
	False	True	False	False	False	4/15/1993
	False	True	False	False	False	11/10/2000
	False	False	False	False	True	10/14/1971
	False	True	False	False	False	12/2/1976
	False	True	False	False	False	8/4/1995
	False	True	False	False	False	2/3/2020
NATIONAL PARK SERVICE	False	True	False	False	False	9/14/2018
	False	True	False	False	False	8/1/1975

Name of Multiple Property Listing	NHL Designated Date	Other Names	Park Name
		Station KPH	Point Reyes
		Brock's Boathouse;The Boathouse	
	12/20/1989	Point Reyes Lifeboat Station	Point Reyes
		Upper Pierce Point Ranch	Point Reyes
			Point Reyes
		A, B, C, D, E, F, G, R Home.1 J. K, L, M, N, Rogers, and W Ranche	Point Reyes
		Point Reyes Naval Direction Finder Station	Point Reyes
		Remillard Brick Kiln	
		Old Downtown Larkspur	
		Alexander Avenue Overhead;Bridge No. 27C-150	
		4-Mrn-33	Golden Gate
			Golden Gate
		Golden Gate Village	
		Marconi Property	
		Marconi Property	
		Muir Woods National Monument Historic District	Muir Woods
National-State Cooperative Program and the CCC in California State Parks MPS		Sydney B. Cushing Amphitheater; Facility Number D3082001	
			Golden Gate
		Coast Miwok Indian Village	
		Stephen Porcella House and "Fashion Shop"	
		Hamilton Field;Hamilton Army Air Force Base	
			Point Reyes
		Cheda Ranch; DeSouza Ranch; Edwin Gallagher Ranch; Genazzi	Point Reyes
Light Stations of California MPS		Point Reyes Lighthouse	
	10/16/2012		
		4 MRN.138	
		The Dixie School	
		Walker, James D., Home; Dollar, Robert, Home; "Falkirk"	
		The Gate House	
		China Camp State Park	
		Bradford Manor;Bradford/Sharp House	
		McNear House	
	7/17/1991		
		Building 11	
		Lime Point Tract Reservation;Tennessee Point Military Reserv	Golden Gate
		Casa Madrona Hotel	
Light Stations of California MPS			
	12/9/1997		
		Lyford's Tower-The Stone Tower-The Castle-Stone Lodge	
		Donahue, Peter, Building;Northwestern Pacific Railroad Depot	
		St. Hilary's; Old St. Hilary's	
			Point Reyes

## **Appendix F: Supplemental Hazards and Hazardous Materials Information**

---

*This page is intentionally blank.*

**STATE-LISTED HAZARDOUS MATERIALS SITES IN MARIN COUNTY**

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
<b>DEPARTMENT OF TOXIC SUBSTANCES</b>			
<b>Fort McDowell</b>	4 miles north of San Francisco, Angel Island	State Response	Active
Bolinas Abandoned Landfill	East Shore Bolinas Lagoon, Bolinas	Historical	Refer: RWQCB
Bolinas Military Reservation	1.7 miles northwest of Bolinas on Mesa Road at N 37D 55' 19"; W 122D 43' 10", Bolinas	Military Evaluation	No Further Action
RCA Antenna Farm	451 Mesa Road, Bolinas	Evaluation	Refer: Other Agency
Corte Madera Nellin Avenue Connector	Nellin Avenue at Tamal Vista Drive, Corte Madera	Historical	Refer: Other Agency
Wincup	195 Tamal Vista Boulevard, Corte Madera	Evaluation	No Further Action
<b>Fair Anselm Center, Inc.</b>	709 & 711 Center Boulevard, Fairfax	State Response	Active
Oak Manor Canyon Site	Oak Manor Drive Area, Fairfax	Evaluation	No Further Action
Point Reyes Lighthouse	Inverness	Military Evaluation	No Further Action
Tomales Bay/Abbotts Lagoon Bombing Range (J09CA7292)	11 miles west/northwest of Inverness	Military Evaluation	No Further Action
Larkspur Disposal Site	Piper Park on Doherty Drive, Larkspur	Historical	Refer: RWQCB
Niven Nursery Site	2 Ward Street, Larkspur	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Ross Valley Sanitary District	2000 Larkspur Landing Circle, Larkspur	Evaluation	No Further Action
Fort Cronkite	Marin County	Military Evaluation	No Further Action
Commodore Helicopters	240 Bolinas Avenue, Mill Valley	Historical	Refer: Other Agency
Graham's Garage	228 Almont, Mill Valley	Historical	Refer: Other Agency
Mill Valley Landfill	Cypress and Edgewood Road, Mill Valley	Evaluation	Refer: Other Agency
Mill Valley Middle School	425 Sycamore, Mill Valley	Evaluation	Refer: Other Agency
Think Clean Cleaners	389 Miller Avenue, Mill Valley	Voluntary Cleanup	Active
Mill Valley AFB	Mount Tamalpais	State Response	Refer: RWQCB
Nicasio School Addition	5555 Nicasio Valley Road, Nicasio	School Investigation	No Action Required
Arnold's Automotive Dismantlers	864 Vallejo Avenue, Novato	Historical	Refer: Other Agency
Bel Marin Keys Unit V	South of Bel Marin Keys Boulevard, Novato	Voluntary Cleanup	Refer: Other Agency
Bill's Texaco Station	200 San Marin Drive, Novato	Historical	Refer: RWQCB
Binford Road Fill Site	Binford and Airport Roads, north & west, Novato	Historical	Refer: Other Agency
Black Point Communications Facility Annex (J09CA0075)	Stonetree Lane, Novato	State Response	Inactive – Action Required
Costco Wholesale #141, Novato	300 Vintage Way, Novato	Tiered Permit	Inactive – Needs Evaluation

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Dept. of Defense Housing Facility – Hamilton Square	970 C Street, Novato	State Response	Active – Land Use Restrictions
Former 7th Street Cleaners	936 7th Street, Novato	Voluntary Cleanup	Active
Golden Gate Business Park	Franklin Avenue next to Northwest Pacific Railroad, Novato	Evaluation	No Further Action
Hamilton - Phase II, Contract	Novato	Military Evaluation	Inactive – Needs Evaluation
Hamilton AAF	Novato	Military Evaluation	No Further Action
<b>Hamilton AAF (J09CA7062) (GSA Phase II_LF26) IR</b>	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified / Operation & Maintenance
<b>Hamilton AAF – (J09CA7062) - North Antenna Field – IR/MMRP</b>	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Active
Hamilton AAF – Ammo Hill (J09CA7084)	Novato	Military Evaluation	No Further Action
Hamilton AAF – WAF Hill (J09CA7085)	Novato	Military Evaluation	No Further Action
Hamilton Army Airfield – BRAC	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Hamilton Elementary School Site	State Access Road/C Street, Novato	School Cleanup	Active – Land Use Restrictions
Hamilton GSA Lot 7	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified
Hamilton GSA Phase I	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified
Hamilton-Phase II, In-House (J09CA7082)	Novato	Military Evaluation	Inactive - Needs Evaluation
Novato Charter School	C Street/Main Gate Road, Novato	School Investigation	No Action Required
Novato City Corporation Yard	550 Davidson Street, Novato	Historical	Refer: Other Agency
Novato Disposal Service	752 McClay Road, Novato	Historical	Refer: Other Agency
Novato DOD Housing	Highway 101 3 miles north of Lucas Valley Road, Novato	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Novato Storage Park	Airport and Binford Roads, Novato	Voluntary Cleanup	No Further Action
Northwest Pacific Railroad Passenger & Freight Depot, Novato	Railroad Avenue at Grant Street, Novato	Evaluation	Inactive – Needs Evaluation
Omniglow Corporation	20-C Pimentel Court, Novato	Voluntary Cleanup	No Further Action
Pacheco Plaza One Hour Cleaners	446 Ignacio Boulevard, Novato	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Rafael Village Family Housing Annex	Novato	Military Evaluation	No Further Action
Redwood Sanitary Landfill	1 miles north of Marin County Airport, adjacent to U.S. 101, Novato	Historical	Refer: RWQCB

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Thorssons Auto Center	862 Vallejo Avenue, Novato	Historical	Refer: Other Agency
National Seashore – Wldcat	Olema	Military Evaluation	No Further Action
Borello Ranch Disposal Site – Ponds	West Side of Highway 1 & Millerton Gulch, Point Reyes	Historical	Refer: RWQCB
Gambonini Mine	Northeast of Salmon Creek Tributary to Walker Creek, Point Reyes	Historical	Refer: RWQCB
West Marin Sanitary Landfill	Highway 1 and Tomasini Canyon, Point Reyes	Historical	Refer: RWQCB
Drakes Bay Range – (J09CA7289) MMRP	1 Bear Valley Road (Point Reyes National Seashore), Point Reyes Station	Military Evaluation	Inactive – Needs Evaluation
Point Reyes Gunnery Range	Point Reyes	Military Evaluation	No Further Action
<b>Bolinas Avenue Center</b>	4&8 Bolinas Avenue & 21 San Anselmo Avenue, San Anselmo	State Response	Active
Frank Valley Military Reservation	Muir Beach	Military Evaluation	No Further Action
Point Reyes Datum & Access Road (J09CA0907)	Point Reyes	Military Evaluation	No Further Action
CDCR – San Quentin State Prison	1 Main Street, San Quentin	Haz Waste - RCRA	Closed
San Quentin Condemned Inmate Complex	San Quentin State Prison, San Quentin	Voluntary Cleanup	Inactive – Action Required
San Quentin State Prison	Point San Quentin, San Quentin	Historical	Refer: RWQCB
Aldersly Garden Retirement Community	326 Mission Avenue, San Rafael	Cal-Mortgage	No Action Required
Arrowhead Jewelry #2	616 Canal Street, San Rafael	Historical	Refer: Other Agency
Bahia Vista Elementary School	125 Bahia Way, San Rafael	School Investigation	No Action Required
Baxter Court Property	714 A Francisco Boulevard West, San Rafael	Tiered Permit	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Baxters Court Area	Baxters Court, San Rafael	State Response	Refer: RCRA
Bayview Business Park	Pelican Way & Kerner Avenue, San Rafael	Historical	Refer: RWQCB
Bellam Boulevard Landfill	Bellam Boulevard (at the end), San Rafael	Historical	Refer: Other Agency
Bucks Launching	665 N. San Pedro Road, San Rafael	Historical	Refer: Other Agency
CA Autism Foundation – A Better Chance	371 Devon Drive, San Rafael	Cal-Mortgage	No Action Required
Captains Cove Housing Development	Smith Ranch Road & Gallinas Creek, San Rafael	Historical	Refer: RWQCB
Diesel Energy Incorporated	40 Woodland Avenue, San Rafael	Historical	Refer: Other Agency
Fairchild Discrete Division	4300 Redwood Highway, San Rafael	Historical	Refer: RWQCB
Fairchild Semiconductor Corp	4300 Redwood Highway, San Rafael	Haz Waste	Closed

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
Fairchild Semiconductor Corp	4300 Redwood Highway, San Rafael	Corrective Action	Refer: RWQCB
Former Maxim Gas Plant Office	4th Street between A & B Streets, San Rafael	State Response	No Further Action
Ghilotti Brothers Disposal Site	Francisco Boulevard and Pelican, San Rafael	Historical	Refer: RWQCB
Griese Radiator Repair	10 Baxters Court, San Rafael	Historical	Refer: Other Agency
Horst Hanf Landfill	834 Francisco Boulevard, San Rafael	Historical	Refer: RWQCB
Marin Debris Disposal Site	Sir Francis Drake Blvd, northwest of San Rafael	Historical	Refer: RWQCB
Marin Radiator & Auto Air Conditioning	786 Andersen Drive, San Rafael	Evaluation	Inactive – Needs Evaluation
Marin-Sonoma Mosquito Abatement District	201 3rd Street, San Rafael	Voluntary Cleanup	Certified / Operation & Maintenance – Land Use Restrictions
Marine Corps Reserve Training Center	153 Madison Avenue, San Rafael	Historical	Refer: Other Agency
McPhail's, Inc	548 Dubois Street, San Rafael	Historical	Refer: Other Agency
PG&E Utility Corporation Yard	1220 Andersen Drive, San Rafael	Evaluation	Inactive – Needs Evaluation
PG&E, San Rafael Manufactured Gas Plant	Second Street and Lindaro Street, San Rafael	Voluntary Cleanup	Certified / Operation & Maintenance – Land Use Restrictions
Photo Waste Recycling Co., Inc.	2980 Kerner Boulevard, San Rafael	Haz Waste – Standardized	Closed
San Francisco Nike Battery 93 (J09CA0944)	San Rafael	Military Evaluation	Refer: RWQCB
San Pedro School	498 Point San Pedro Road, San Rafael	Historical	No Further Action
San Quentin Disposal Company	1615 Francisco Boulevard, San Rafael	Historical	Refer: RWQCB
San Rafael Bivouac Area	San Rafael	Military Evaluation	No Further Action
San Rafael Plastics Company	97 Jordan Street, San Rafael	Historical	Refer: RWQCB
San Rafael Rock Quarry	Point San Pedro Road at McNears Point, San Rafael	Historical	Refer: Other Agency
Shoreline Center	111 Shoreline Boulevard, San Rafael	Historical	Refer: Other Agency
Specification Chromium Corporation	14 Baxters Court, San Rafael	Evaluation	Inactive – Needs Evaluation
Specification Chromium Corporation	712 Francisco Boulevard, San Rafael	Tiered Permit	No Further Action
Stinson Beach (Artillery) Fire Control Station (J09CA0959)	Stinson Beach	Military Evaluation	No Further Action
The Car Shop	616 Lindaro Street, San Rafael	Evaluation	No Further Action
Union Oil Co. of California	620 Canal Street, San Rafael	Historical	Refer: RWQCB
Universal Protective Coatings	121-123 Jordan Street, San Rafael	Historical	Refer: RWQCB
Western Chrome Plating and Polishing	11 Baxters Court, San Rafael	Historical	Refer: Other Agency
Western Geological Services	2360-C Kerner Boulevard, San Rafael	Historical	Refer: Other Agency



<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
East Fort Baker	91 acres; 2 miles south of Sausalito	State Response	Certified
Fort Baker – IR/MMRP	2 miles south of Sausalito	State Response	Inactive – Action Required
Fort Barry (J09CA3107)	9 miles northwest of San Francisco (in the Golden Gate National Recreation Area), Sausalito	State Response	Inactive – Action Required
Galilee Harbor, Parcel 1	300 Napa Street, Sausalito	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Marinship	Spring Street and Gate 5 Road to the Bay, Sausalito	Evaluation	No Further Action
Northwestern Pacific Railroad	El Portal & Bridgeway, Sausalito	Historical	Refer: Other Agency
Photo Waste Recycling	200 Gate 5 Road, #115, Sausalito	Haz Waste – Standardized	Closed
South Pacific Division Laboratory	25 Liberty Ship Way, Sausalito	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
U.S. Army – Fort Barry	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
U.S. Army – Fort Cronkhite	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
U.S. Army – Fort Mendenhall	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
Angel Island State Park	Angel Island, San Francisco Bay	Historical	Refer: RCRA
Naval Net Depot	Tiburon	Military Evaluation	No Further Action
San Francisco Nike Battery 91, Angel Island	Angel Island, San Francisco Bay	Military Evaluation	Inactive – Action Required
<b>REGIONAL WATER QUALITY CONTROL BOARD</b>			
Corte Madera Cleaners	143 Corte Madera Town Center, Corte Madera	Cleanup Program Site	Open – Long Term Management
<b>Former Bianco Cadillac/Saab-Subaru</b>	201 Casa Buena Drive, Corte Madera	LUST Cleanup Site	Open – Assessment & Interim Remedial Action
77 & 83 Broadway	77 Broadway, Fairfax	Cleanup Program Site	Open – Assessment & Interim Remedial Action
1589 Marshall Beach Road	1589 Marshall Beach Road, Fairfax	Land Disposal Site	Open
Halling Property	12788 Sir Frances Drake Boulevard, Fairfax	Cleanup Program Site	Open – Inactive
<b>Maintenance Facility – Samuel Taylor Park</b>	Unknown Samuel Taylor Park, Lagunitas	LUST Cleanup Site	Open – Site Assessment
<b>Former Econogas Station</b>	2070 Redwood Highway, Larkspur	LUST Cleanup Site	Open – Site Assessment
Larkspur Ferry Terminal	East Sir Francis Drake Boulevard, Larkspur	Cleanup Program Site	Open – Inactive
<b>Marin Car Wash</b>	2066 Redwood Highway, Larkspur	LUST Cleanup Site	Open - Eligible For Closure
Grossi Dairy	16500 State Route 1, Marshall	Land Disposal Site	Open
Marshall Boat Works	19180-19145 State Route One, Marshall	Cleanup Program Site	Open – Site Assessment

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
Zimmerman Dairy	22788 Clark Road, Marshall	Land Disposal Site	Open
<b>Chevron Strawberry Food Mart</b>	580 Redwood Highway, Mill Valley	LUST Cleanup Site	Open – Site Assessment
<b>Jiffy Lube #655</b>	374 Miller Avenue, Mill Valley	LUST Cleanup Site	Open – Site Assessment
<b>Marin Car Wash</b>	584 Redwood Highway, Mill Valley	LUST Cleanup Site	Open – Site Assessment
Martin's Triangle	234 Shoreline Highway, Mill Valley	Cleanup Program Site	Open – Inactive
Mill Valley Middle School	Unknown Camino Alto & Sycamore, Mill Valley	Cleanup Program Site	Open – Inactive
York Cleaners	31 Miller Avenue, Mill Valley	Cleanup Program Site	Open – Verification Monitoring
Gonzales Landfill	5749 Lucas Valley, Nicasio	Land Disposal Site	Open
Lucas Valley Road Spill	3838 Lucas Valley Road, Nicasio	Cleanup Program Site	Open – Remediation
<b>Chevron</b>	5810 Nave Drive, Novato	LUST Cleanup Site	Open – Site Assessment
Fairfax French Cleaners	173 San Marin Drive, Novato	Cleanup Program Site	Open – Verification Monitoring
<b>Former Mobil RAS #04-HTR</b>	1400 Novato Boulevard South, Novato	LUST Cleanup Site	Open – Eligible For Closure
Hamilton Air Base	Novato	Land Disposal Site	Open
<b>Indian Valley College</b>	1800 Ignacio Boulevard, Novato	LUST Cleanup Site	Open – Site Assessment
<b>Novato Bus Facility</b>	801 Golden Gate Place, Novato	LUST Cleanup Site	Open – Verification Monitoring
<b>Novato Unified School District Maintenance Facility</b>	819 Olive Street, Novato	LUST Cleanup Site	Open – Site Assessment
Redwood Landfill	Highway 101 North, Novato	Land Disposal Site	Open – Operating
Seven to Seven Cleaners	1432 South Novato Boulevard, Novato	Cleanup Program Site	Open – Remediation
<b>Shell</b>	2085 Novato Boulevard South, Novato	LUST Cleanup Site	Open – Site Assessment
<b>Unocal</b>	7455 Redwood Boulevard, Novato	LUST Cleanup Site	Open – Remediation
Chileno Valley Mercury Mine	Chileno Valley Road, west of Petaluma	Cleanup Program Site	Open – Site Assessment
West Marin Landfill	Highway 1, Point Reyes Station	Land Disposal Site	Open
<b>Former Chevron</b>	700/750 Sir Francis Drake Boulevard, San Anselmo	LUST Cleanup Site	Open – Site Assessment
San Quentin State Prison	I-580 at Main Street, San Quentin	Cleanup Program Site	Open – Verification Monitoring
7 Hoag Street	7 Hoag Street, San Rafael	Cleanup Program Site	Open – Eligible For Closure
Bayview Business Park- Horst Hanf Landfill	22 Pelican Way, San Rafael	Land Disposal Site	Open – Closed/With Monitoring
Former Fairchild Semiconductor	4300 Redwood Highway, San Rafael	Cleanup Program Site	Open – Verification Monitoring
Former Grand Auto Store #9	850 4th Street, San Rafael	Cleanup Program Site	Open – Inactive
Former Marin Cleaners	520 4th Street, San Rafael	Cleanup Program Site	Open – Verification Monitoring

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Former Prosperity Cleaners	187 Marinwood Avenue, San Rafael	Cleanup Program Site	Open – Remediation
Ghilotti, Barbara Fasken Trust	200 Morpew Street, San Rafael	Cleanup Program Site	Open – Inactive
Loch Lomond Marina	261 Loch Lomond Drive, San Rafael	Cleanup Program Site	Open – Verification Monitoring
Los Gallinas Sanitary District	300 Smith Ranch Road, San Rafael	Cleanup Program Site	Open – Inactive
Marin/Sonoma Mosquito (former)	201 Third Street, San Rafael	Cleanup Program Site	Open – Inactive
PG&E – Manufactured Gas Plant – San Rafael	Third Street and Brooks Avenue, San Rafael	Cleanup Program Site	Open – Remediation
San Quentin Solid Waste District	1615 Francisco Boulevard, San Rafael	Land Disposal Site	Open
<b>San Rafael City Schools Maintenance Facility</b>	38 Union Street, San Rafael	LUST Cleanup Site	Open – Verification Monitoring
<b>Shell</b>	834 Irwin Street, San Rafael	LUST Cleanup Site	Open – Verification Monitoring
Warnecke Property	62-68 Belvedere Street, San Rafael	Cleanup Program Site	Informational Item / Review Complete
Former Anderson's Boat Yard	400 Harbor Drive, Sausalito	Cleanup Program Site	Open – Verification Monitoring
Marinship	2330 Marinship Way, Sausalito	Cleanup Program Site	Open – Inactive
Newhall Residence	2900 Paradise Drive, Tiburon	Cleanup Program Site	Open – Inactive
<b>Ledger Ranch 2000</b>	<b>5700 Middle Road, Petaluma (Tomaes)</b>	<b>LUST Cleanup Site</b>	<b>Open – Active</b>
Sartori Dairy	3301 Tomales Petaluma Highway, Tomales	Land Disposal Site	Open
Soulajule Reservoir	Soulajule Reservoir, West Marin	Cleanup Program Site	Open – Site Assessment

SOURCE: Department of Toxic Substances Control (DTSC) EnviroStor website, <https://www.envirostor.dtsc.ca.gov/public/search?basic=True>, accessed 6/8/22; Regional Water Quality Control Board (RWQCB) GeoTracker website, <https://geotracker.waterboards.ca.gov/search?cmd=search&hidept=True&status=&reporttitle=Marin+County&county=Marin&excludenc=True>, accessed 6/10/22, 7/9/22.

#### **Notes**

<sup>1</sup> Site/Facility Name:

**Bold site/facility name** indicates site on State's Cortese list.

<sup>2</sup> Program Type:

**Cal-Mortgage:** Under a Memorandum of Understanding with the Cal-Mortgage Loan Insurance Division (Cal-Mortgage) of the Office of Statewide Health Planning and Development, DTSC reviews environmental documents for sites applying for their guaranteed loan insurance program for the construction, improvement and expansion of health care facilities. The loan applicants are either public entities or non-profit groups. The environmental review is done as part of the real estate due diligence process and the properties are not expected to have had hazardous substances releases.

**Cleanup Program Sites:** Includes all "non-federally owned" sites that are regulated under the State Water Resources Control Board's Site Cleanup Program and/or similar programs conducted by each of the nine Regional Water Quality Control Boards. Cleanup Program Sites are also commonly referred to as "Site Cleanup Program sites". Cleanup Program Sites are varied and include but are not limited to pesticide and fertilizer facilities, rail yards, ports, equipment supply facilities, metals facilities, industrial manufacturing and maintenance sites, dry cleaners, bulk transfer facilities, refineries, mine sites, landfills, RCRA/CERCLA cleanups, and some brownfields. Unauthorized releases detected at Cleanup Program Sites are highly variable and include but are not

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p>limited to hydrocarbon solvents, pesticides, perchlorate, nitrate, heavy metals, and petroleum constituents, to name a few.</p> <p><b>Corrective Action:</b> Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective actions." These facilities treated, stored, disposed and/or transferred hazardous waste.</p> <p><b>Evaluation:</b> Identifies suspected, but unconfirmed, contaminated sites that need or have gone through a limited investigation and assessment process. If a site is found to have confirmed contamination, it will change from Evaluation to either a State Response or Voluntary Cleanup site type. Sites found to have no contamination at the completion of the limited investigation and/or assessment process result in a No Action Required (for Phase I assessments) or No Further Action (for Preliminary Endangerment Assessments [PEAs] or Phase II assessments) determination.</p> <p><b>Haz Waste – RCRA:</b> A facility handling federal Resource Conservation and Recovery Act (RCRA) hazardous waste and permitted under the State's five-tiered program.</p> <p><b>Haz Waste – Standardized:</b> A facility handling non-RCRA hazardous waste, but waste regulated as a hazardous waste in California and permitted under the State's five-tiered program.</p> <p><b>Historical:</b> Identifies sites from an older database where no site type was identified. Most of these sites have a status of Referred or No Further Action. DTSC is working to clean-up this data by identifying an appropriate site type for each "Historic" site.</p> <p><b>Land Disposal Sites:</b> Includes sites with solid and/or liquid wastes discharged to land such as landfills, mines, surface impoundments, waste piles, and land treatment facilities. These may be regulated pursuant to the California Code of Regulations (Chapter 15 of Title 23, or Title 27), or regulated pursuant to the California Water Code. Land disposal sites regulated pursuant to the California Water Code include composting facilities. Wastes contained at land disposal sites are characterized as Class I (hazardous), Class II (designated), Class III (non-hazardous), or Unclassified (inert) pursuant to the California Code of Regulations, Title 22.</p> <p><b>Leaking Underground Storage Tank (LUST) Cleanup Sites (LUST Cleanup Site):</b> Includes all Underground Storage Tank (UST) sites that have had an unauthorized release (i.e. leak or spill) of a hazardous substance, usually fuel hydrocarbons, and are being (or have been) cleaned up. In GeoTracker, Leaking Underground Storage Tank (LUST) sites consist almost entirely of fuel-contaminated LUST sites (also known as "Leaking Underground Fuel Tank", or "LUFT" sites) which are regulated pursuant to Title 23 of the California Code of Regulations, Chapter 16, Article 11.</p> <p><b>LUST (Leaking Underground Storage Tank):</b> One or more underground storage tanks (USTs) that leak petroleum and other hazardous substances into soil and groundwater, thereby posing a risk to drinking water quality and human health.</p> <p><b>Military Evaluation:</b> Military evaluation sites are military facilities where no remedial action has occurred, based on the completed activities. These can include Open Bases, Closed Bases and formerly used defense sites (FUD sites).</p> <p><b>State Response:</b> Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.</p> <p><b>School Investigation:</b> School investigation sites are proposed for existing school sites that are being evaluated by DTSC for possible hazardous materials contamination where no remedial action has occurred based on completed activities.</p> <p><b>Tiered Permit:</b> California's five-tier permitting program. The tiers, in descending order of regulatory oversight, are:</p> <p><i>Full Permit Tier</i> – Facilities requiring an RCRA permit, plus selected non-RCRA activities pursuant to Title 22, California Code of Regulations.</p> <p><i>Standardized Permit Tier</i> – Facilities that manage waste not regulated under RCRA, but regulated as a hazardous waste by the State of California.</p> <p><i>Permit by Rule Tier</i> – A California-only (non-RCRA) onsite treatment permit for specific waste streams and treatment processes where wastes that are generated at the facility are treated onsite.</p> <p><i>Conditional Authorization Tier</i> – A California-only (non-RCRA) onsite treatment authorization for specifically defined waste streams.</p>			

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p><u>Conditional Exemption Tier</u> – A California-only (non-RCRA) onsite treatment authorization for small-quantity treatment and other low-risk treatment.</p>			
<p><u>Voluntary Cleanup</u>: Identifies sites with either confirmed or unconfirmed releases, and the project proponents have requested that DTSC oversee evaluation, investigation, and/or cleanup activities and have agreed to provide coverage for DTSC's costs.</p>			
<p><sup>3</sup> <u>Status</u>:</p>			
<p><u>Active</u>: Identifies that an investigation and/or remediation is currently in progress and that DTSC is actively involved, either in a lead or support capacity.</p>			
<p><u>Active – Land Use Restrictions</u>: A land use restricted site is a property where limits or requirements on future use of the property have been placed due to varying levels of cleanup possible, practical, or necessary at the site.</p>			
<p><u>Certified</u>: Identifies sites that have certified cleanups in place or completed sites with previously confirmed release that are subsequently certified by DTSC as having been remediated satisfactorily under DTSC oversight.</p>			
<p><u>Certified/Operation &amp; Maintenance</u>: Identifies sites that have certified cleanups in place but require ongoing Operation and Maintenance (O&amp;M) activities. The Certified O&amp;M status designation means that all planned activities necessary to address the contamination problems have been implemented. However, some of these remedial activities (such as pumping and treating contaminated groundwater) must be continued for many years before complete cleanup will be achieved. Prior to the Certified O&amp;M designation, all institutional controls (e.g., land use restrictions) that are necessary to protect public health must be in place.</p>			
<p><u>Certified O&amp;M – Land Use Restrictions</u>: Identifies sites where a remedy is implemented and the selected remedy results in hazardous substances remaining at the site at concentrations above those acceptable for unrestricted use and a Land Use Restriction or Land Use Covenant has been recorded for the site.</p>			
<p><u>Closed</u>: Identifies a facility that has completed closure of all hazardous waste management units.</p>			
<p><u>Completed – Case Closed</u>: A closure letter or other formal closure decision document has been issued for the site.</p>			
<p><u>Inactive – Action Required</u>: Identifies non-active sites where, through a PEA (initial assessment) or other evaluation, DTSC has determined that a removal or remedial action or further extensive investigation is required.</p>			
<p><u>Inactive – Needs Evaluation</u>: Identifies non-active sites where DTSC has determined a Preliminary Endangerment Assessment (PEA) or other evaluation is required.</p>			
<p><u>No Further Action</u>: Identifies completed sites where DTSC determined after investigation, generally a PEA (initial assessment), that the property does not pose a problem to public health or the environment.</p>			
<p><u>Open</u>: Identified steps for case closure remain to be completed, and until then case is considered open.</p>			
<p><u>Open – Assessment &amp; Interim Remedial Action</u>: An "interim" remedial action is occurring at the site AND additional activities such as site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring.</p>			
<p><u>Open – Closed/with Monitoring</u>: A land disposal site that has ceased accepting waste and was closed in accordance with applicable statutes, regulations, and local ordinances in effect at time of closure. Land disposal site in post closure maintenance period as waste could have an adverse effect on the quality of the waters of the state. Site has waste discharge requirements.</p>			
<p><u>Open – Eligible for Closure</u>: Corrective action at the site has been determined to be completed and any remaining petroleum constituents from the release are considered to be a low threat to human health, safety, and the environment.</p>			
<p><u>Open – Inactive</u>: No regulatory oversight activities are being conducted by the Lead Agency.</p>			
<p><u>Open – Long Term Management</u>: Remediation phases are complete, all current risks to receptors are mitigated, and risk management measures are in place. A monitoring/sampling program is occurring to confirm ongoing performance of the risk management measures (e.g. visual inspection of caps to prevent dermal exposure, or pressure monitoring of sub-slab depressurization systems). The case should be periodically re-evaluated (i.e. Five Year Reviews) to verify that the risk management remains effective and to evaluate the case for closure when risk management is no longer warranted.</p>			

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p><u>Open – Operating</u>: A land disposal site that is accepting waste. These sites have been issued waste discharge requirements by the appropriate Regional Water Board.</p> <p><u>Open – Remediation</u>: An approved remedy or remedies that has/have been selected for the impacted area at the site and is being implemented by the responsible party under an approved cleanup plan for the site. This includes any ongoing remedy that is either passive or active, or uses a combination of technologies.</p> <p><u>Open – Site Assessment</u>: Site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring at the site. Examples of site assessment activities include, but are not limited to, the following: (1) identification of the contaminants and the investigation of their potential impacts; (2) determination of the threats/impacts to water quality; (3) evaluation of the risk to humans and ecology; (4) delineation of the nature and extent of contamination; (5) delineation of the contaminant plume(s); and (6) development of the Site Conceptual Model.</p> <p><u>Open – Verification Monitoring</u>: Remediation phases that are essentially complete, and a monitoring/sampling program is occurring to confirm successful completion of cleanup at the site--e.g., no “active” remediation is considered necessary or no additional “active” remediation is anticipated as needed; or an active remediation system has been shut-off and the potential for a rebound in contaminant concentrations is under evaluation.</p> <p><u>Refer: Other Agency</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by another state or local environmental regulatory agency.</p> <p><u>Refer: RCRA</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by DTSC’s Hazardous Waste Management Program and are identified as Resource Conservation and Recovery Act (RCRA).</p> <p><u>Refer: RWQCB</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by the California Regional Water Quality Control Boards (RWQCBs) (see GeoTracker list).</p>			

Link to MarinMap: <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>  
 Layer Name = "Hazardous Sites Cortese"

OBJECTID	Business name	Street Number	Street Name	City	State	Zip	Unincorp?	Case Type
34	X WEST MARIN LANDFILL		HIGHWAY 1	POINT REYES STATIO	CA	94956	YES	Land Disposal Site
36	GROSSI DRAINAGE	16500	STATE ROUTE 1	MARSHALL	CA	94940	YES	Cleanup Program Site
38	GAMBONINI MERCURY MINESITE		MARSHALL PETALUMA RD	WEST MARIN CO	CA	94940	YES	Land Disposal Site
39	NOVATO STORAGE PARK RANCHO DEL PANTANO		AIRPORT RD & BINFORD RD	NOVATO	CA	94945	YES	Cleanup Program Site
41	SAN QUENTIN STATE PRISON		I-580 @ MAIN ST	SAN QUENTIN	CA	94964	YES	Cleanup Program Site
42	SAMUEL TAYLOR PARK		SAMUEL TAYLOR PARK	LAGUNITAS	CA	94938	YES	LUST Cleanup Site
45	PROSPERITY CLEANERS	187	MARINWOOD AVE.	SAN RAFAEL	CA	94903	YES	Cleanup Program Site
46	PRIVATE RESIDENCE		PRIVATE RESIDENCE - WHARF RD	BOLINAS	CA	94924	YES	LUST Cleanup Site
47	BOLINAS MESA PROJECT	270	ELM ROAD	BOLINAS	CA	94924	YES	Wastewater Treatment
48	SARTORI DAIRY	3301	TOMALES PETALUMA HWY	TOMALES	CA	94971	YES	Land Disposal Site
49	REDWOOD LANDFILL		HIGHWAY 101 NORTH	NOVATO	CA	94947	YES	Land Disposal Site
50	GONZALES LANDFILL	5749	LUCAS VALLEY	NICASIO	CA	94946	YES	Land Disposal Site
51	GROSSI DAIRY	16500	STATE ROUTE 1	MARSHALL	CA	94940	YES	Land Disposal Site
52	ZIMMERMAN DAIRY	22788	CLARK RD.	MARSHALL	CA	94940	YES	Land Disposal Site
53	X 1589 MARSHALL RD.	1589	MARSHALL RD.	TOMALES	CA	94971	YES	Land Disposal Site
54	CIRCLE S RANCH	1740	TOMALES ROAD	PETALUMA	CA	94952	YES	Cleanup Program Site
55	MARSHALL BOAT WORKS	19180	STATE ROUTE ONE	MARSHALL	CA	94940	YES	Cleanup Program Site
56	HALLING PROPERTY	12788	SIR FRANCES DRAKE BLVD	INVERNESS	CA	94937	YES	Cleanup Program Site
57	BLACK JOHN SLOUGH RANCHO DEL PANTANO	8190	BINFORD RD	NOVATO	CA	94945	YES	Cleanup Program Site
58	MARTIN'S TRIANGLE	234	SHORELINE HWY	MILL VALLEY	CA	94941	YES	Cleanup Program Site
60	NEWHALL RESIDENCE	2900	PARADISE DR	TIBURON	CA	94920	YES	Cleanup Program Site
61	NPS- NORTH DISTRICT OPERATIONS CENTER	17400	SIR FRANCIS DRAKE BLVD.	INVERNESS	CA	94937	YES	LUST Cleanup Site
62	COLLEGE OF MARIN KENTFIELD CAMPUS	835	COLLEGE AVENUE	KENTFIELD	CA	94904	YES	LUST Cleanup Site
63	MARIN COUNTY AIRPORT GNOSS FIELD	451	AIRPORT RD	NOVATO	CA	94948	YES	LUST Cleanup Site
64	Strawberry Chevron Food Mart	580	Redwood Highway	Mill Valley	CA	94941	YES	LUST Cleanup Site
65	DRAKES HIGHWAY GARAGE	12786	SIR FRANCIS DRAKE BLVD	INVERNESS	CA	94937	YES	LUST Cleanup Site
66	MARIN CAR WASH	584	REDWOOD HWY	MILL VALLEY	CA	94941	YES	LUST Cleanup Site

Status	Status Date	Lead Agency	seWo	Local Agency	RB Case Number	Loc Case Number	File Location
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		2 215099001		
Open - Inactive	1995-09-01	SAN FRANCISCO BAY RWQCB (REGION 2)	UNA		SL20282900		
Open - Inactive	2009-10-30	SAN FRANCISCO BAY RWQCB (REGION 2)	LW		2 215068N01		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0007		
Open - Site Assessment	2002-01-14	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ		21S0020		Regional Board
Open - Site Assessment	1997-08-04	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0135	21-0135	
Open - Site Assessment	2008-02-15	SAN FRANCISCO BAY RWQCB (REGION 2)	REL		21S0053		Regional Board
Open - Verification Monitoring	2009-10-18	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0380		Regional Board
		MARIN COUNTY DOHS		MARIN COUNTY			
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0005		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	VP		2 215065001		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		2 215034N01		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0002		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0012		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0022		
Open - Inactive	2009-02-26	NORTH COAST RWQCB (REGION 1)	CHH	SONOMA COUNTY	1NSO756		Regional Board
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0015		
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0022		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0026		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU	MARIN COUNTY	21S0013		Regional Board
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0010		
Open - Site Assessment	2007-03-08	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0386		
Open - Site Assessment	2001-11-05	SAN FRANCISCO BAY RWQCB (REGION 2)	REL	MARIN COUNTY	21-0365	UNKNOWN	Regional Board
Open - Site Assessment	1995-07-06	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0298	21-0298	
Open - Site Assessment	2010-08-27	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0402		Regional Board
Open - Verification Monitoring	2009-11-25	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0360		
Open - Site Assessment	1994-12-08	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0069	21-0069	



Land Use Restrictions	Potential Contaminants Of Conce	Potential Media Affected	Site History
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Other Groundwater (uses other than drinking water), Soil, Soil	Area of concern is the maintenance and garage yard of SQSP.
		Other Groundwater (uses other than drinking water)	2 underground storage tanks removed, gasoline contaminated
		Indoor Air, Other Groundwater (uses other than drinking water)	lengthy history on GeoTracker website with numerous docume
		Other Groundwater (uses other than drinking water)	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Soil	This case was filed based on a neighbor complaint regarding t
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Soil	
		NONE LISTED	
		Other Groundwater (uses other than drinking water)	1 underground storage tank was removed and the site is being
		Other Groundwater (uses other than drinking water)	Gasoline contaminated soil may have come into contact with g
		Other Groundwater (uses other than drinking water)	Groundwater and soil contaminated from jet fuel. Check with S
		NONE LISTED	underground storage containers were removed and potential g
		Other Groundwater (uses other than drinking water)	
		Other Groundwater (uses other than drinking water)	groundwater, soil and air contamination. Contact SWRCB and

*This page is intentionally blank.*

## **Appendix G: Supplemental Hydrology Information**

---

*This page is intentionally blank.*

**Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)**

**Category 4A:**

Water segments where at least one of the listings is being addressed by a U.S. Environmental Protection Agency (EPA) approved TMDL.

Water Body	Water Body Type	Integrated Report Category	Water Body Counties	Pollutant
Arroyo Corte Madera Del Presidio	River & Stream	4a	Marin	Diazinon
Chicken Ranch Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
China Camp Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Corte Madera Creek	River & Stream	4a	Marin	Diazinon
Coyote Creek (Marin County)	River & Stream	4a	Marin	Diazinon
Gallinas Creek	River & Stream	4a	Marin	Diazinon
McNears Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Miller Creek	River & Stream	4a	Marin	Diazinon
Millerton Point	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Novato Creek	River & Stream	4a	Marin	Diazinon
Olema Creek subwatershed (Marin County, tributary to Lagunitas Creek)	River & Stream	4a	Marin	Pathogens
San Rafael Creek	River & Stream	4a	Marin	Diazinon
San Antonio Creek (Marin/Sonoma Co)	River & Stream	4a	Marin, Sonoma	Diazinon

**Category 5:**

Water segments that require the development of a TMDL.

Water Body	Water Body Type	Integrated Report Category	Water Body Counties	Pollutant
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Chlordane
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	DDT (Dichlorodiphenyltrichloroethane)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Dieldrin
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Dioxin compounds (including 2,3,7,8-TCDD)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Furan Compounds

San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Invasive Species
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Mercury
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	PCBs (Polychlorinated biphenyls)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	PCBs (Polychlorinated biphenyls) (dioxin-like)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Selenium
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Trash
Bon Tempe Reservoir	Lake & Reservoir	5	Marin	Mercury
Golden Hinde Beach	Coastal & Bay Shoreline	5	Marin	Indicator Bacteria
Lagunitas Creek	River & Stream	5	Marin	Nutrients
Lagunitas Creek	River & Stream	5	Marin	Pathogens
Lagunitas Creek	River & Stream	5	Marin	Sedimentation/Siltation
Nicasio Reservoir	Lake & Reservoir	5	Marin	Mercury
Paradise Cove Beach (San Francisco Bay, Central)	Coastal & Bay Shoreline	5	Marin	Indicator Bacteria
Richardson Bay	Bay & Harbor	5	Marin	Chlordane
Richardson Bay	Bay & Harbor	5	Marin	DDT (Dichlorodiphenyltrichloroethane)
Richardson Bay	Bay & Harbor	5	Marin	Dieldrin
Richardson Bay	Bay & Harbor	5	Marin	Dioxin compounds (including 2,3,7,8-TCDD)
Richardson Bay	Bay & Harbor	5	Marin	Furan Compounds
Richardson Bay	Bay & Harbor	5	Marin	Indicator Bacteria
Richardson Bay	Bay & Harbor	5	Marin	Invasive Species
Richardson Bay	Bay & Harbor	5	Marin	Mercury
Richardson Bay	Bay & Harbor	5	Marin	PCBs (Polychlorinated biphenyls)
Richardson Bay	Bay & Harbor	5	Marin	PCBs (Polychlorinated biphenyls) (dioxin-like)
Soulajule Reservoir	Lake & Reservoir	5	Marin	Mercury
Soulajule Reservoir	Lake & Reservoir	5	Marin	PCBs (Polychlorinated biphenyls)
Tomales Bay	Bay & Harbor	5	Marin	Mercury
Tomales Bay	Bay & Harbor	5	Marin	Nutrients
Tomales Bay	Bay & Harbor	5	Marin	Pathogens
Tomales Bay	Bay & Harbor	5	Marin	Sedimentation/Siltation
Walker Creek	River & Stream	5	Marin	Mercury
Walker Creek	River & Stream	5	Marin	Nutrients
Walker Creek	River & Stream	5	Marin	Pathogens
Walker Creek	River & Stream	5	Marin	Sedimentation/Siltation
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Chlordane
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	DDT (Dichlorodiphenyltrichloroethane)

San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Dieldrin
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Dioxin compounds (including 2,3,7,8-TCDD)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Furan Compounds
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Invasive Species
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Mercury
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	PCBs (Polychlorinated biphenyls)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	PCBs (Polychlorinated biphenyls) (dioxin-like)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Selenium
Petaluma River	River & Stream	5	Marin, Sonoma	Diazinon
Petaluma River	River & Stream	5	Marin, Sonoma	Nutrients
Petaluma River	River & Stream	5	Marin, Sonoma	Pathogens
Petaluma River	River & Stream	5	Marin, Sonoma	Sedimentation/Siltation
Petaluma River	River & Stream	5	Marin, Sonoma	Trash
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Diazinon
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Nickel
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Nutrients
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Pathogens

Source: State Water Resources Control Board, Impaired Water Bodies, Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), [https://www.waterboards.ca.gov/water\\_issues/programs/tmdl/integrated2014\\_2016.shtml](https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml), accessed 9/10/20.

*This page is intentionally blank.*



## **Appendix H: Supplemental Noise Information**

---

*This page is intentionally blank.*

# Marin County Housing and Safety Element Update Marin County, CA

**Appendix: Noise Data**  
**Prepared by: MIG, Inc.**  
**August 2022**

## **Appendix Contents**

[Sheet 1: LT ANM](#)

Summary of Long-Term Ambient Noise Monitoring

[Sheet 2: ST ANM](#)

Summary of Short-Term Ambient Noise Monitoring

## Sheet 1: Summary of Long-Term Ambient Noise Monitoring Data

Table 1: Summary of Long-Term Noise Measurements LT-1

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Monday, May 16, 2022	1:00 PM	1 Hour	58.7	45.0	75.5	66.3	62.0	60.6	59.6	56.6	51.4	58.7	58.7
Monday, May 16, 2022	2:00 PM	1 Hour	58.9	44.4	73.2	65.7	62.2	61.0	60.0	57.2	52.0	58.9	58.9
Monday, May 16, 2022	3:00 PM	1 Hour	59.7	44.1	74.1	66.6	63.2	61.9	60.9	58.2	52.1	59.7	59.7
Monday, May 16, 2022	4:00 PM	1 Hour	59.3	41.5	79.3	66.6	62.6	61.4	60.2	57.3	51.4	59.3	59.3
Monday, May 16, 2022	5:00 PM	1 Hour	59.5	41.6	84.8	67.9	62.3	61.4	60.4	57.7	51.6	59.5	59.5
Monday, May 16, 2022	6:00 PM	1 Hour	57.6	39.6	72.7	64.4	61.7	60.2	58.8	55.3	47.7	57.6	57.6
Monday, May 16, 2022	7:00 PM	1 Hour	55.8	38.9	74.5	63.3	60.3	58.5	57.0	52.2	45.5	55.8	60.8
Monday, May 16, 2022	8:00 PM	1 Hour	54.9	36.0	79.7	64.8	59.3	56.7	54.3	49.1	42.5	54.9	59.9
Monday, May 16, 2022	9:00 PM	1 Hour	51.6	35.3	72.1	60.9	56.9	54.4	51.1	43.8	39.4	51.6	56.6
Monday, May 16, 2022	10:00 PM	1 Hour	49.4	34.8	67.3	59.1	54.2	51.1	48.3	42.0	37.7	59.4	59.4
Monday, May 16, 2022	11:00 PM	1 Hour	45.9	35.0	65.4	55.6	51.0	47.8	44.0	38.5	36.8	55.9	55.9
Tuesday, May 17, 2022	12:00 AM	1 Hour	43.6	33.8	66.3	54.2	48.2	42.6	39.0	36.5	35.4	53.6	53.6
Tuesday, May 17, 2022	1:00 AM	1 Hour	43.3	33.0	63.5	53.6	48.2	44.5	40.4	34.9	33.8	53.3	53.3
Tuesday, May 17, 2022	2:00 AM	1 Hour	39.3	32.9	62.3	49.6	42.7	40.2	37.7	34.2	33.7	49.3	49.3
Tuesday, May 17, 2022	3:00 AM	1 Hour	39.5	32.9	62.0	48.7	44.1	40.2	37.6	34.2	33.7	49.5	49.5
Tuesday, May 17, 2022	4:00 AM	1 Hour	41.3	33.2	64.9	51.3	46.3	41.0	36.3	34.5	34.1	51.3	51.3
Tuesday, May 17, 2022	5:00 AM	1 Hour	50.4	34.4	69.1	60.1	54.9	51.7	49.1	44.9	40.2	60.4	60.4
Tuesday, May 17, 2022	6:00 AM	1 Hour	56.7	36.4	78.4	66.1	61.2	58.9	56.8	51.2	42.9	66.7	66.7
Tuesday, May 17, 2022	7:00 AM	1 Hour	58.7	38.8	73.1	65.3	62.5	61.2	59.9	56.8	50.8	58.7	58.7
Tuesday, May 17, 2022	8:00 AM	1 Hour	60.6	39.9	74.6	66.4	63.2	62.4	61.5	59.6	55.5	60.6	60.6
Tuesday, May 17, 2022	9:00 AM	1 Hour	57.9	38.0	72.4	65.4	62.1	60.6	59.0	55.3	47.6	57.9	57.9
Tuesday, May 17, 2022	10:00 AM	1 Hour	57.9	37.2	75.3	65.6	61.9	60.6	59.1	55.3	46.7	57.9	57.9
Tuesday, May 17, 2022	11:00 AM	1 Hour	58.5	37.2	78.4	67.2	62.4	60.8	59.1	55.3	46.5	58.5	58.5
Tuesday, May 17, 2022	12:00 PM	1 Hour	57.7	38.5	71.9	64.8	61.5	60.2	58.9	55.7	48.4	57.7	57.7
<i>Daytime (7 AM to 7 PM)</i>			<i>58.8</i>	<i>37.2</i>	<i>84.8</i>	<i>66.1</i>	<i>62.3</i>	<i>61.1</i>	<i>59.9</i>	<i>56.9</i>	<i>51.0</i>	--	<i>58.8</i>
<i>Daytime (7 AM to 10 PM)</i>			<i>58.3</i>	<i>35.3</i>	<i>84.8</i>	<i>65.7</i>	<i>61.8</i>	<i>60.5</i>	<i>59.2</i>	<i>56.1</i>	<i>50.2</i>	<i>58.3</i>	--
<i>Evening (7 PM to 10 PM)</i>			<i>54.5</i>	<i>35.3</i>	<i>79.7</i>	<i>63.3</i>	<i>59.0</i>	<i>56.9</i>	<i>54.8</i>	<i>49.6</i>	<i>43.1</i>	--	<i>59.5</i>
<i>Nighttime (10 PM to 7 AM)</i>			<i>49.3</i>	<i>32.9</i>	<i>78.4</i>	<i>58.9</i>	<i>54.0</i>	<i>51.3</i>	<i>48.8</i>	<i>43.5</i>	<i>37.8</i>	<i>59.3</i>	<i>59.3</i>
<i>DNL</i>			--	--	--	--	--	--	--	--	--	<i>58.7</i>	--
<i>CNEL</i>			--	--	--	--	--	--	--	--	--	--	<i>59.1</i>

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Tuesday, May 17, 2022	1:00 PM	1 Hour	57.4	40.2	70.0	64.5	61.3	59.9	58.7	55.2	47.6	57.4	57.4
Tuesday, May 17, 2022	2:00 PM	1 Hour	58.7	40.5	74.6	65.4	62.3	61.2	59.9	56.9	50.2	58.7	58.7
Tuesday, May 17, 2022	3:00 PM	1 Hour	59.3	43.6	73.7	65.7	62.8	61.4	60.4	57.9	52.0	59.3	59.3
Tuesday, May 17, 2022	4:00 PM	1 Hour	59.5	40.9	79.7	67.9	62.6	61.3	60.1	57.1	50.1	59.5	59.5
Tuesday, May 17, 2022	5:00 PM	1 Hour	58.7	41.0	76.0	65.4	62.1	61.0	60.0	57.2	50.7	58.7	58.7
Tuesday, May 17, 2022	6:00 PM	1 Hour	57.4	39.8	72.6	64.7	61.5	60.0	58.7	54.8	47.5	57.4	57.4
Tuesday, May 17, 2022	7:00 PM	1 Hour	56.1	41.6	68.1	63.1	60.3	58.9	57.5	53.1	47.0	56.1	61.1
Tuesday, May 17, 2022	8:00 PM	1 Hour	54.3	38.8	67.7	62.4	58.9	57.0	55.1	49.8	44.3	54.3	59.3
Tuesday, May 17, 2022	9:00 PM	1 Hour	52.3	35.5	75.5	61.9	56.9	54.6	51.9	45.9	39.7	52.3	57.3
Tuesday, May 17, 2022	10:00 PM	1 Hour	50.6	34.7	69.2	60.7	55.7	52.0	48.3	42.2	38.5	60.6	60.6
Tuesday, May 17, 2022	11:00 PM	1 Hour	43.9	33.7	63.1	53.4	49.2	45.0	41.4	37.5	36.2	53.9	53.9
Wednesday, May 18, 2022	12:00 AM	1 Hour	40.4	33.3	64.1	50.0	45.2	40.1	36.3	34.7	34.1	50.4	50.4
Wednesday, May 18, 2022	1:00 AM	1 Hour	43.4	33.0	67.7	54.8	47.2	43.6	40.3	35.1	33.7	53.4	53.4
Wednesday, May 18, 2022	2:00 AM	1 Hour	34.7	32.8	53.6	38.5	36.0	35.4	34.7	34.1	33.7	44.7	44.7
Wednesday, May 18, 2022	3:00 AM	1 Hour	45.2	33.2	67.3	56.4	49.6	41.7	37.2	35.1	34.3	55.2	55.2
Wednesday, May 18, 2022	4:00 AM	1 Hour	42.9	33.5	66.9	53.4	47.0	43.0	39.5	36.5	34.7	52.9	52.9
Wednesday, May 18, 2022	5:00 AM	1 Hour	50.8	34.4	70.1	60.4	55.6	52.5	49.8	43.8	39.9	60.8	60.8
Wednesday, May 18, 2022	6:00 AM	1 Hour	56.6	38.2	74.8	65.8	61.4	59.0	56.9	50.6	43.5	66.6	66.6
Wednesday, May 18, 2022	7:00 AM	1 Hour	58.4	39.4	70.4	64.9	62.3	61.1	59.8	56.4	48.8	58.4	58.4
Wednesday, May 18, 2022	8:00 AM	1 Hour	60.1	39.8	73.3	66.0	63.3	62.4	61.3	58.8	53.3	60.1	60.1
Wednesday, May 18, 2022	9:00 AM	1 Hour	58.8	38.6	75.1	66.5	62.6	61.2	59.7	56.1	48.8	58.8	58.8
Wednesday, May 18, 2022	10:00 AM	1 Hour	58.1	39.6	72.0	65.3	61.9	60.7	59.4	55.8	47.9	58.1	58.1
Wednesday, May 18, 2022	11:00 AM	1 Hour	58.4	38.9	72.0	65.9	62.3	60.8	59.4	55.7	48.7	58.4	58.4
Wednesday, May 18, 2022	12:00 PM	1 Hour	57.6	39.2	72.6	64.4	61.4	60.2	58.9	55.5	48.6	57.6	57.6
<i>Daytime (7 AM to 7 PM)</i>			<i>58.6</i>	<i>38.6</i>	<i>79.7</i>	<i>65.7</i>	<i>62.3</i>	<i>61.0</i>	<i>59.8</i>	<i>56.6</i>	<i>49.9</i>	--	<i>58.6</i>
<i>Daytime (7 AM to 10 PM)</i>			<i>58.0</i>	<i>35.5</i>	<i>79.7</i>	<i>65.2</i>	<i>61.8</i>	<i>60.4</i>	<i>59.2</i>	<i>55.9</i>	<i>49.2</i>	<i>58.0</i>	--
<i>Evening (7 PM to 10 PM)</i>			<i>54.5</i>	<i>35.5</i>	<i>75.5</i>	<i>62.5</i>	<i>58.9</i>	<i>57.2</i>	<i>55.4</i>	<i>50.5</i>	<i>44.6</i>	--	<i>59.5</i>
<i>Nighttime (10 PM to 7 AM)</i>			<i>49.5</i>	<i>32.8</i>	<i>74.8</i>	<i>59.1</i>	<i>54.3</i>	<i>51.4</i>	<i>48.9</i>	<i>43.0</i>	<i>38.0</i>	<i>59.5</i>	<i>59.5</i>
DNL			--	--	--	--	--	--	--	--	--	58.6	--
CNEL			--	--	--	--	--	--	--	--	--	--	59.1

**Table 2: Summary of Long-Term Noise Measurements LT-2**

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Tuesday, May 17, 2022	11:00 AM	1 hour	44.4	30.3	68.8	53.2	48.7	45.7	43.8	41.2	36.1	44.4	44.4
Tuesday, May 17, 2022	12:00 PM	1 Hour	47.7	29.5	70.5	56.5	52.0	48.5	47.0	44.0	39.0	47.7	47.7
Tuesday, May 17, 2022	1:00 PM	1 Hour	45.1	31.9	69.2	54.3	49.5	46.2	43.5	40.5	37.7	45.1	45.1
Tuesday, May 17, 2022	2:00 PM	1 Hour	47.0	29.4	71.7	56.6	52.2	48.1	44.3	40.2	35.2	47.0	47.0
Tuesday, May 17, 2022	3:00 PM	1 Hour	46.4	31.7	70.2	55.6	50.6	47.4	44.6	42.0	39.8	46.4	46.4
Tuesday, May 17, 2022	4:00 PM	1 Hour	47.8	30.8	71.0	57.8	53.0	49.5	44.2	38.6	35.4	47.8	47.8
Tuesday, May 17, 2022	5:00 PM	1 Hour	46.1	30.7	71.0	56.3	51.3	46.8	41.6	35.8	33.7	46.1	46.1
Tuesday, May 17, 2022	6:00 PM	1 Hour	47.2	30.7	70.6	57.9	52.1	46.3	42.3	38.6	34.5	47.2	47.2
Tuesday, May 17, 2022	7:00 PM	1 Hour	43.8	28.8	67.4	53.7	48.9	45.4	41.4	36.6	32.8	48.8	48.8
Tuesday, May 17, 2022	8:00 PM	1 Hour	43.9	29.1	68.8	53.4	48.2	44.8	42.9	38.9	33.5	48.9	48.9
Tuesday, May 17, 2022	9:00 PM	1 Hour	31.9	29.5	42.0	34.2	32.7	32.3	32.1	31.7	31.2	36.9	36.9
Tuesday, May 17, 2022	10:00 PM	1 Hour	38.2	29.3	62.6	44.8	43.4	41.9	38.8	33.6	31.0	48.2	48.2
Tuesday, May 17, 2022	11:00 PM	1 Hour	32.0	28.7	43.9	34.9	33.1	32.7	32.4	31.7	31.0	42.0	42.0
Wednesday, May 18, 2022	12:00 AM	1 Hour	30.6	26.9	37.1	32.4	31.4	31.2	31.0	30.5	29.8	40.6	40.6
Wednesday, May 18, 2022	1:00 AM	1 Hour	28.9	25.8	37.8	31.8	30.2	29.7	29.3	28.5	27.6	38.9	38.9
Wednesday, May 18, 2022	2:00 AM	1 Hour	29.9	26.2	42.4	32.9	31.0	30.6	30.3	29.7	28.9	39.9	39.9
Wednesday, May 18, 2022	3:00 AM	1 Hour	31.5	27.5	36.5	33.4	32.5	32.2	31.9	31.3	30.5	41.5	41.5
Wednesday, May 18, 2022	4:00 AM	1 Hour	34.0	28.4	45.6	37.3	35.6	35.1	34.6	33.6	32.1	44.0	44.0
Wednesday, May 18, 2022	5:00 AM	1 Hour	43.7	30.5	61.8	49.7	46.9	46.0	44.9	42.4	38.2	53.7	53.7
Wednesday, May 18, 2022	6:00 AM	1 Hour	45.0	34.4	68.6	54.4	49.4	46.0	42.9	39.7	37.3	55.0	55.0
Wednesday, May 18, 2022	7:00 AM	1 Hour	44.3	32.8	70.0	53.6	48.5	45.1	42.5	39.6	37.6	44.3	44.3
Wednesday, May 18, 2022	8:00 AM	1 Hour	45.9	31.9	69.9	55.5	50.4	47.0	44.2	40.3	37.1	45.9	45.9
Wednesday, May 18, 2022	9:00 AM	1 Hour	45.4	30.9	69.0	55.7	49.8	46.1	43.4	38.9	35.9	45.4	45.4
Wednesday, May 18, 2022	10:00 AM	1 Hour	45.5	30.3	70.0	55.0	51.0	47.0	42.2	37.8	35.7	45.5	45.5
<i>Daytime (7 AM to 7 PM)</i>			46.2	29.4	71.7	55.9	51.0	47.1	43.9	40.3	36.8	--	46.2
<i>Daytime (7 AM to 10 PM)</i>			45.7	28.8	71.7	55.3	50.4	46.6	43.4	39.8	36.3	46.4	--
<i>Evening (7 PM to 10 PM)</i>			42.2	28.8	68.8	51.8	46.9	43.4	40.6	36.6	32.6	--	47.2
<i>Nighttime (10 PM to 7 AM)</i>			38.9	25.8	68.6	46.7	42.8	40.7	38.7	36.1	33.3	48.9	48.9
DNL			--	--	--	--	--	--	--	--	--	47.5	--
CNEL			--	--	--	--	--	--	--	--	--	--	47.5

## Sheet 2: Summary of Short-Term Ambient Noise Monitoring Data

Table 1: Summary of Short-Term Ambient Noise Measurements (ST-01, ST-02, ST-03, and ST-04)

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-01	Monday, May 16, 2022	8:20 AM	10 minutes	57.5	54.1	63.2	60.4	59.0	58.4	58.0	57.3	56.0
	Monday, May 16, 2022	8:30 AM	10 minutes	57.6	53.5	62.1	60.0	59.0	58.6	58.2	57.3	56.0
	Monday, May 16, 2022	8:40 AM	10 minutes	58.3	53.7	63.0	60.9	59.8	59.4	59.0	58.1	56.6
	Monday, May 16, 2022	8:50 AM	10 minutes	59.8	54.3	75.0	66.6	62.7	60.9	59.7	58.4	56.6
	Monday, May 16, 2022	9:00 AM	10 minutes	57.2	53.5	62.6	59.9	58.4	58.0	57.7	57.0	55.9
	Monday, May 16, 2022	9:10 AM	10 minutes	58.8	53.7	64.4	61.3	60.2	59.8	59.5	58.5	57.0
	Hourly Average		1 hour	58.3	53.5	75.0	62.3	60.1	59.3	58.7	57.8	56.4
ST-02	Monday, May 16, 2022	9:30 AM	10 minutes	65.2	53.9	80.9	71.1	67.3	66.8	66.0	64.4	62.4
	Monday, May 16, 2022	9:40 AM	10 minutes	65.0	59.5	68.8	66.9	66.3	66.0	65.7	65.0	63.0
	Monday, May 16, 2022	9:50 AM	10 minutes	64.8	59.2	68.4	67.4	66.2	65.9	65.5	64.7	62.7
	Monday, May 16, 2022	10:00 AM	10 minutes	65.1	60.0	74.0	68.9	67.4	66.5	65.8	64.4	62.4
	Monday, May 16, 2022	10:10 AM	10 minutes	64.4	59.7	70.9	68.1	66.0	65.5	65.0	64.0	62.3
	Monday, May 16, 2022	10:20 AM	10 minutes	64.7	60.3	68.4	67.0	66.1	65.7	65.4	64.7	63.0
			1 hour	64.9	53.9	80.9	68.5	66.6	66.1	65.6	64.5	62.6
ST-03	Monday, May 16, 2022	11:00 AM	10 minutes	69.6	55.4	78.3	75.5	73.1	72.0	71.0	68.4	62.6
	Monday, May 16, 2022	11:10 AM	10 minutes	70.6	50.3	84.5	78.6	73.6	72.5	71.3	68.9	62.5
	Monday, May 16, 2022	11:20 AM	10 minutes	69.3	49.1	80.6	76.3	72.5	71.6	70.7	67.9	59.7
	Monday, May 16, 2022	11:30 AM	10 minutes	69.0	45.5	78.0	75.0	72.5	71.3	70.5	67.9	60.3
	Monday, May 16, 2022	11:40 AM	10 minutes	68.0	43.1	78.8	74.2	71.9	71.0	69.7	65.8	59.8
	Monday, May 16, 2022	11:50 AM	10 minutes	69.6	49.4	80.2	76.5	73.0	71.8	70.9	68.3	59.4
			1 hour	69.4	43.1	84.5	76.3	72.8	71.7	70.7	68.0	60.9
ST-04	Monday, May 16, 2022	2:10 PM	10 minutes	50.5	38.2	68.2	61.7	53.4	50.1	48.1	45.0	42.2
	Monday, May 16, 2022	2:20 PM	10 minutes	49.1	40.3	65.8	59.9	51.5	48.1	46.4	44.8	42.8
	Monday, May 16, 2022	2:30 PM	10 minutes	53.8	39.6	73.5	64.8	58.6	53.7	48.9	45.5	42.9
	Monday, May 16, 2022	2:40 PM	10 minutes	47.1	38.2	64.8	57.3	49.7	46.3	45.3	42.8	40.9
	Monday, May 16, 2022	2:50 PM	10 minutes	57.1	39.9	75.0	65.4	61.1	59.0	57.1	54.5	50.0
	Monday, May 16, 2022	3:00 PM	10 minutes	54.9	38.1	74.0	64.8	58.0	56.6	55.4	50.9	47.4
			1 hour	53.4	38.1	75.0	63.2	57.1	54.5	52.6	49.4	45.7

**Table 2: Summary of Short-Term Ambient Noise Measurements (ST-05, ST-06, ST-07, and ST-08)**

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-05	Tuesday, May 17, 2022	8:30 AM	10 minutes	70.1	56.2	79.5	77.1	74.3	73.1	71.8	67.4	59.6
	Tuesday, May 17, 2022	8:40 AM	10 minutes	69.0	55.6	77.6	75.6	73.4	71.9	70.3	66.5	58.9
	Tuesday, May 17, 2022	8:50 AM	10 minutes	69.7	59.7	80.6	76.9	73.5	72.3	70.8	67.4	62.2
	Tuesday, May 17, 2022	9:00 AM	10 minutes	69.3	57.4	81.2	77.8	73.7	71.6	70.0	64.6	60.7
	Tuesday, May 17, 2022	9:10 AM	10 minutes	68.3	56.4	82.7	77.3	72.4	70.7	68.9	63.3	59.1
	Tuesday, May 17, 2022	9:20 AM	10 minutes	67.6	57.3	79.8	76.0	72.3	70.0	67.7	62.7	59.7
	Hourly Average		1 hour	69.1	55.6	82.7	76.8	73.3	71.7	70.1	65.7	60.2
ST-06	Tuesday, May 17, 2022	11:00 AM	10 minutes	52.5	46.0	65.2	58.8	55.6	54.5	53.2	50.6	48.9
	Tuesday, May 17, 2022	11:10 AM	10 minutes	51.9	46.6	58.8	56.4	54.3	53.5	52.6	51.1	49.5
	Tuesday, May 17, 2022	11:20 AM	10 minutes	53.0	45.9	61.0	57.8	55.9	55.0	53.8	52.1	49.6
	Tuesday, May 17, 2022	11:30 AM	10 minutes	54.9	45.6	72.1	63.5	58.6	57.8	56.9	51.3	49.1
	Tuesday, May 17, 2022	11:40 AM	10 minutes	51.7	46.8	60.5	56.0	53.9	53.3	52.8	51.1	49.2
	Tuesday, May 17, 2022	11:50 AM	10 minutes	50.4	44.8	58.5	54.5	52.7	51.7	50.9	49.6	48.1
			1 hour	52.6	44.8	72.1	59.0	55.6	54.7	53.8	51.0	49.1
ST-07	Tuesday, May 17, 2022	12:30 PM	10 minutes	63.1	38.8	72.5	70.7	67.7	66.2	64.2	59.6	49.0
	Tuesday, May 17, 2022	12:40 PM	10 minutes	63.2	38.0	75.0	69.9	66.8	65.8	64.8	61.4	53.8
	Tuesday, May 17, 2022	12:50 PM	10 minutes	63.9	41.2	75.9	71.1	68.0	66.6	65.5	61.6	51.4
	Tuesday, May 17, 2022	1:00 PM	10 minutes	63.7	38.7	79.4	72.5	67.5	66.2	64.4	60.4	49.6
	Tuesday, May 17, 2022	1:10 PM	10 minutes	63.7	41.5	73.8	70.9	67.8	66.6	65.3	61.2	50.9
	Tuesday, May 17, 2022	1:20 PM	10 minutes	63.4	38.7	72.3	70.3	67.6	66.6	65.0	60.9	51.1
			1 hour	63.5	38.0	79.4	71.0	67.6	66.3	64.9	60.9	51.3
ST-08	Tuesday, May 17, 2022	2:00 PM	10 minutes	53.3	39.8	69.6	61.1	58.1	56.7	53.4	49.2	47.3
	Tuesday, May 17, 2022	2:10 PM	10 minutes	48.1	39.6	60.6	52.7	49.7	49.1	48.7	47.7	44.9
	Tuesday, May 17, 2022	2:20 PM	10 minutes	47.3	37.2	53.6	50.6	48.9	48.5	48.0	47.2	45.1
	Tuesday, May 17, 2022	2:30 PM	10 minutes	48.0	36.8	63.4	55.0	51.3	49.9	48.8	46.3	42.5
	Tuesday, May 17, 2022	2:40 PM	10 minutes	41.3	37.3	54.3	47.0	43.3	42.4	41.8	40.5	39.0
	Tuesday, May 17, 2022	2:50 PM	10 minutes	40.9	36.5	50.0	45.3	42.9	42.3	41.7	40.3	38.4
			1 hour	48.5	36.5	69.6	55.2	52.2	51.0	48.9	46.3	44.0



**Table 3: Summary of Short-Term Ambient Noise Measurements (ST-09, ST-10, ST-11)**

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-09	Wednesday, May 18, 2022	8:50 AM	10 minutes	61.2	39.7	77.0	70.9	66.3	63.2	60.0	54.0	45.9
	Wednesday, May 18, 2022	9:00 AM	10 minutes	59.8	40.7	73.7	68.8	64.6	62.5	60.5	54.4	47.7
	Wednesday, May 18, 2022	9:10 AM	10 minutes	60.9	38.6	72.9	69.9	66.0	63.7	60.9	54.8	46.3
	Wednesday, May 18, 2022	9:20 AM	10 minutes	59.5	39.1	73.4	70.2	64.1	61.3	58.5	52.2	44.6
	Wednesday, May 18, 2022	9:30 AM	10 minutes	58.2	34.9	73.6	68.8	62.4	60.0	57.6	51.5	42.7
	Wednesday, May 18, 2022	9:40 AM	10 minutes	59.5	36.9	72.2	68.8	63.8	62.2	60.3	54.1	43.3
	Hourly Average		1 hour	60.0	34.9	77.0	69.6	64.7	62.3	59.8	53.7	45.4
ST-10	Wednesday, May 18, 2022	10:00 AM	10 minutes	68.4	39.6	82.4	77.2	72.8	71.2	69.7	64.3	54.0
	Wednesday, May 18, 2022	10:10 AM	10 minutes	68.0	42.1	81.1	76.7	72.1	70.5	69.0	63.9	55.6
	Wednesday, May 18, 2022	10:20 AM	10 minutes	68.9	41.7	85.0	78.7	72.9	71.2	69.7	64.3	54.8
	Wednesday, May 18, 2022	10:30 AM	10 minutes	68.5	39.1	82.2	77.6	72.6	71.1	69.7	64.3	54.0
	Wednesday, May 18, 2022	10:40 AM	10 minutes	68.1	42.2	81.3	77.0	72.5	70.7	68.8	64.2	54.8
	Wednesday, May 18, 2022	10:50 AM	10 minutes	68.3	40.8	82.7	77.6	72.9	70.9	69.1	63.6	50.4
			1 hour	68.4	39.1	85.0	77.5	72.6	70.9	69.3	64.1	54.2
ST-11	Wednesday, May 18, 2022	11:50 AM	10 minutes	59.1	50.8	63.8	62.3	61.1	60.6	60.2	58.9	56.1
	Wednesday, May 18, 2022	12:00 PM	10 minutes	57.9	51.5	62.7	60.3	59.4	59.1	58.8	57.8	55.7
	Wednesday, May 18, 2022	12:10 PM	10 minutes	58.3	51.4	62.8	61.4	60.1	59.7	59.3	58.0	55.7
	Wednesday, May 18, 2022	12:20 PM	10 minutes	58.3	52.2	64.5	61.6	60.4	59.8	59.3	57.8	55.5
	Wednesday, May 18, 2022	12:30 PM	10 minutes	58.1	52.7	67.0	62.1	60.0	59.3	58.9	57.7	55.4
	Wednesday, May 18, 2022	12:40 PM	10 minutes	63.6	53.7	88.9	76.7	62.4	61.0	60.4	59.3	57.2
			1 hour	59.8	50.8	88.9	69.6	60.7	60.0	59.5	58.3	56.0

**Summary**

**Filename** LxT\_Data.049  
**Serial Number** 5064  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402  
**User**  
**Location**  
**Job Description**  
**Note**

Marin Co GP HE/SE EIR -

**Measurement Description** SJ1A 5/16-18/22  
**Start** 2022/05/16 12:50:00  
**Stop** 2022/05/18 13:24:19  
**Duration** 2 Days 00:34:19.0  
**Run Time** 2 Days 00:34:19.0  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 12:46:28  
**Post Calibration** 2022/05/18 13:25:43  
**Calibration Deviation** 0.02 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.5 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.1</b>	76.1	81.1 dB
<b>Under Range Limit</b>	<b>24.3</b>	25.3	31.4 dB
<b>Noise Floor</b>	15.1	16.2	22.3 dB

**Results**

**LASeq** 56.5 dB  
**LASE** 108.9 dB  
**EAS** 8.581 mPa<sup>2</sup>h  
**EAS8** 1.413 mPa<sup>2</sup>h  
**EAS40** 7.066 mPa<sup>2</sup>h  
**LApk (max)** 2022/05/17 9:51:28 105.7 dB  
**LASmax** 2022/05/16 17:50:57 84.8 dB  
**LASmin** 2022/05/18 2:36:19 32.8 dB  
**SEA** -99.9 dB

**LAS > 80.0 dB (Exceedence Counts / Duration)** 1 2.1 s

**LAS > 90.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 125.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 135.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 140.0 dB (Exceedence Counts / Duration)** 0 0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00- 19:00		19:00- 22:00-	22:00- 07:00	
	58.6	58.1	49.4	59.1	58.7	54.5	49.4
LCSeq	63.8 dB						
LASeq	56.5 dB						
LCSeq - LASeq	7.4 dB						
LAleq	57.8 dB						
LAeq	56.5 dB						
LAleq - LAeq	1.4 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

**Dose Settings**

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

**Results**

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.00 %
TWA (Projected)	-99.9	-1.3 dB
TWA (t)	-99.9	11.7 dB
Lep (t)	64.3	64.3 dB

**Statistics**

LAS1.00	65.7 dB
LAS10.00	60.9 dB

<b>LAS16.67</b>	59.3 dB
<b>LAS25.00</b>	57.4 dB
<b>LAS50.00</b>	49.2 dB
<b>LAS90.00</b>	34.3 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
<b>Direct</b>	2020/01/28 5:43:54	-28.6
<b>PRMLxT1L</b>	2022/05/18 13:25:41	-28.8
<b>PRMLxT1L</b>	2022/05/16 12:46:27	-28.8
<b>PRMLxT1L</b>	2022/05/03 9:01:14	-28.9
<b>PRMLxT1L</b>	2022/05/03 7:05:42	-28.9
<b>PRMLxT1L</b>	2022/04/06 0:22:11	-28.8
<b>PRMLxT1L</b>	2022/04/05 19:25:24	-28.8
<b>PRMLxT1L</b>	2022/04/02 23:03:52	-28.8
<b>PRMLxT1L</b>	2022/04/02 19:10:24	-28.8
<b>PRMLxT1L</b>	2022/04/02 17:43:08	-28.8
<b>PRMLxT1L</b>	2022/03/31 13:53:52	-28.9
<b>PRMLxT1L</b>	2022/03/31 13:37:13	-28.9

*Detailed calibration records available upon request.*

**Summary**

Filename LxT\_Data.053  
 Serial Number 5065  
 Model SoundTrack LxT®  
 Firmware Version 2.402

User  
 Location  
 Job Description

**Note**

Marin Co GP HE/SE EIR - SJ2

Measurement Description 5/17-18/22  
 Start 2022/05/17 10:40:00  
 Stop 2022/05/18 13:51:06  
 Duration 1 Day 03:11:06.0  
 Run Time 1 Day 03:11:06.0  
 Pause 0:00:00.0

Pre Calibration 2022/05/17 10:33:19  
 Post Calibration 2022/05/18 13:54:39  
 Calibration Deviation 0.06 dB

**Overall Settings**

RMS Weight A Weighting  
 Peak Weight A Weighting  
 Detector Slow  
 Preamp Direct  
 Microphone Correction Off  
 Integration Method Exponential  
 OBA Range Normal  
 OBA Bandwidth 1/1 and 1/3  
 OBA Freq. Weighting A Weighting  
 OBA Max Spectrum Bin Max  
 Overload 122.2 dB

	A	C	Z
Under Range Peak	78.5	75.5	80.5 dB
Under Range Limit	15.5	14.2	17.9 dB
Noise Floor	6.4	5.0	8.8 dB

**Results**

LASeq 44.4 dB  
 LASE 94.3 dB  
 EAS 296.317  $\mu\text{Pa}^2\text{h}$   
 EAS8 87.200  $\mu\text{Pa}^2\text{h}$   
 EAS40 436.001  $\mu\text{Pa}^2\text{h}$   
 LApeak (max) 2022/05/17 10:40:16 104.0 dB  
 LASmax 2022/05/18 13:49:14 71.8 dB  
 LASmin 2022/05/18 1:02:24 25.8 dB  
 SEA -99.9 dB

LAS > 80.0 dB (Exceedence Counts / Duration) 0 0.0 s

LAS > 90.0 dB (Exceedence Counts / Duration) 0 0.0 s

LApeak > 125.0 dB (Exceedence Counts / Duration) 0 0.0 s

LApeak > 135.0 dB (Exceedence Counts / Duration) 0 0.0 s

LApeak > 140.0 dB (Exceedence Counts / Duration) 0 0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00-		19:00- 22:00-	07:00	
	47.2	45.6	38.9	47.5	46.1	42.2	38.9
LCSeq	54.6 dB						
LASEq	44.4 dB						
LCSeq - LASEq	10.2 dB						
LALeq	49.6 dB						
LAeq	44.4 dB						
LALeq - LAeq	5.2 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Dose Settings	OSHA-1	OSHA-2
Dose Name		
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results	OSHA-1	OSHA-2
Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	49.7	49.7 dB

Statistics	Value
LAS1.00	53.8 dB
LAS10.00	43.4 dB
LAS16.67	41.2 dB

LAS25.00	39.3 dB
LAS50.00	35.6 dB
LAS90.00	30.2 dB

**Calibration History**

		<b>Date</b>	<b>dB re. 1V/Pa</b>
<b>Preamp</b>			
<b>Direct</b>		2020/01/28 6:05:01	-28.5
<b>PRMLxT1L</b>		2022/05/18 13:54:38	-28.6
<b>PRMLxT1L</b>		2022/05/17 10:33:16	-28.6
<b>PRMLxT1L</b>		2022/05/16 15:25:33	-28.7
<b>PRMLxT1L</b>		2022/05/16 14:05:34	-28.6
<b>PRMLxT1L</b>		2022/05/16 12:04:05	-28.7
<b>PRMLxT1L</b>		2022/05/16 8:10:38	-28.6
<b>PRMLxT1L</b>		2022/05/16 8:10:09	-28.6
<b>PRMLxT1L</b>		2022/05/03 9:04:41	-28.6
<b>PRMLxT1L</b>		2022/05/03 7:08:55	-28.6
<b>PRMLxT1L</b>		2022/04/02 17:21:13	-28.5
<b>PRMLxT1L</b>		2022/03/31 11:12:01	-28.5
<b>Other</b>		2022/03/29 14:00:31	-28.6
<b>Other</b>		2022/03/29 9:47:56	-28.5
<b>Other</b>		2018/11/13 8:29:15	-28.3
<b>Other</b>		2018/11/05 14:21:01	-28.3
<b>Other</b>		2018/06/27 10:46:33	-28.0
<b>Other</b>		2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request.*

**Summary**

**Filename** LxT\_Data.051  
**Serial Number** 5065  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402

**User**  
**Location**

**Job Description****Note**

**Measurement Description** Marin Co GP HE/SE EIR - SJ2A 5/16-17/22  
**Start** 2022/05/16 8:20:00  
**Stop** 2022/05/16 12:00:08  
**Duration** 3:40:08.8  
**Run Time** 3:40:08.8  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 8:10:39  
**Post Calibration** 2022/05/16 12:04:07  
**Calibration Deviation** -0.05 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.4 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.0</b>	76.0	81.0 dB
<b>Under Range Limit</b>	<b>25.3</b>	25.9	31.6 dB
<b>Noise Floor</b>	16.1	16.8	22.5 dB

**Results**

**LASeq** 67.3 dB  
**LASE** 108.5 dB  
**EAS** 7.840 mPa<sup>2</sup>h  
**EAS8** 17.093 mPa<sup>2</sup>h  
**EAS40** 85.466 mPa<sup>2</sup>h  
**LApeak (max)** 2022/05/16 10:55:04 117.4 dB  
**LASmax** 2022/05/16 10:55:04 85.6 dB  
**LASmin** 2022/05/16 10:52:04 32.8 dB  
**SEA** -99.9 dB



<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	9	45.7 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight 07:00- 22:00-		Lden	LDay	LEvening	LNight
		07:00	22:00		07:00- 19:00	19:00- 22:00	22:00- 07:00
	67.3	67.3	-99.9	67.3	67.3	-99.9	-99.9
LCSeq	78.8 dB						
LASeq	67.3 dB						
LCSeq - LASeq	11.5 dB						
LAleq	70.2 dB						
LAeq	67.3 dB						
LAleq - LAeq	2.9 dB						
# Overloads	9						
Overload Duration	20.2 s						
# OBA Overloads	9						
OBA Overload Duration	20.2 s						

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.9	0.03 %
Projected Dose	-99.9	0.06 %
TWA (Projected)	-99.9	36.0 dB
TWA (t)	-99.9	30.4 dB
Lep (t)	63.9	63.9 dB

Statistics	
LAS1.00	76.7 dB
LAS10.00	71.3 dB

LAS16.67	69.0 dB
LAS25.00	66.8 dB
LAS50.00	63.6 dB
LAS90.00	55.7 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
Direct	2020/01/28 6:05:01	-28.5
PRMLxT1L	2022/05/16 12:04:05	-28.7
PRMLxT1L	2022/05/16 8:10:38	-28.6
PRMLxT1L	2022/05/16 8:10:09	-28.6
PRMLxT1L	2022/05/03 9:04:41	-28.6
PRMLxT1L	2022/05/03 7:08:55	-28.6
PRMLxT1L	2022/04/02 17:21:13	-28.5
PRMLxT1L	2022/03/31 11:12:01	-28.5
PRMLxT1L	2022/03/31 10:22:25	-28.6
PRMLxT1L	2022/03/30 19:25:42	-28.6
PRMLxT1L	2022/03/30 18:58:48	-28.6
PRMLxT1L	2022/03/30 15:22:06	-28.5
Other	2022/03/29 14:00:31	-28.6
Other	2022/03/29 9:47:56	-28.5
Other	2018/11/13 8:29:15	-28.3
Other	2018/11/05 14:21:01	-28.3
Other	2018/06/27 10:46:33	-28.0
Other	2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request*

**Summary**

**Filename** LxT\_Data.052  
**Serial Number** 5065  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402

**User**  
**Location**  
**Job Description**

**Note**  
**Measurement Description** Marin Co GP HE/SE EIR - SJ2A 5/16-17/22  
**Start** 2022/05/16 14:10:00  
**Stop** 2022/05/16 15:25:11  
**Duration** 1:15:11.3  
**Run Time** 1:15:11.3  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 14:05:36  
**Post Calibration** 2022/05/16 15:25:34  
**Calibration Deviation** -0.03 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.4 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.0</b>	76.0	81.0 dB
<b>Under Range Limit</b>	<b>25.3</b>	25.9	31.6 dB
<b>Noise Floor</b>	16.1	16.8	22.5 dB

**Results**

**LASeq** 62.1 dB  
**LASE** 98.6 dB  
**EAS** 813.582  $\mu\text{Pa}^2\text{h}$   
**EAS8** 5.194  $\text{mPa}^2\text{h}$   
**EAS40** 25.969  $\text{mPa}^2\text{h}$   
**LApeak (max)** 2022/05/16 15:25:09 121.4 dB  
**LASmax** 2022/05/16 15:25:10 88.6 dB  
**LASmin** 2022/05/16 15:11:11 25.5 dB  
**SEA** 131.4 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	3	5.6 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	LNight			LEvening		
	Ldn	LDay 07:00-22:00-22:00 07:00	Lden	LDay 07:00-19:00-19:00 19:00	22:00	Lden
	62.1	62.1	-99.9	62.1	62.1	-99.9
LCSeq	82.2 dB					
LASeq	62.1 dB					
LCSeq - LAsEq	20.1 dB					
LALeq	69.7 dB					
LAeq	62.3 dB					
LALeq - LAeq	7.4 dB					
# Overloads	8					
Overload Duration	16.5 s					
# OBA Overloads	8					
OBA Overload Duration	16.5 s					

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.9	0.01 %
Projected Dose	-99.9	0.05 %
TWA (Projected)	-99.9	34.7 dB
TWA (t)	-99.9	21.3 dB
Lep (t)	54.1	54.1 dB

Statistics	
LAS1.00	72.6 dB
LAS10.00	67.0 dB

LAS16.67	61.1 dB
LAS25.00	53.1 dB
LAS50.00	45.5 dB
LAS90.00	41.2 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
Direct	2020/01/28 6:05:01	-28.5
PRMLxT1L	2022/05/16 15:25:33	-28.7
PRMLxT1L	2022/05/16 14:05:34	-28.6
PRMLxT1L	2022/05/16 12:04:05	-28.7
PRMLxT1L	2022/05/16 8:10:38	-28.6
PRMLxT1L	2022/05/16 8:10:09	-28.6
PRMLxT1L	2022/05/03 9:04:41	-28.6
PRMLxT1L	2022/05/03 7:08:55	-28.6
PRMLxT1L	2022/04/02 17:21:13	-28.5
PRMLxT1L	2022/03/31 11:12:01	-28.5
PRMLxT1L	2022/03/31 10:22:25	-28.6
PRMLxT1L	2022/03/30 19:25:42	-28.6
Other	2022/03/29 14:00:31	-28.6
Other	2022/03/29 9:47:56	-28.5
Other	2018/11/13 8:29:15	-28.3
Other	2018/11/05 14:21:01	-28.3
Other	2018/06/27 10:46:33	-28.0
Other	2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request.*

## Summary

Filename LxT\_Data.076  
Serial Number 3790  
Model SoundExpert™ LxT  
Firmware Version 2.402  
User  
Location  
Job Description  
Note  
Measurement Description Marin Co GP HE/SE EIR -  
RVSA 5/17-18/22  
Start 17/05/2022 08:30:00  
Stop 17/05/2022 09:30:56  
Duration 1:00:56.9  
Run Time 1:00:56.9  
Pause 0:00:00.0

Pre Calibration 17/05/2022 08:18:41  
Post Calibration 17/05/2022 09:33:26  
Calibration Deviation -0.01 dB

## Overall Settings

RMS Weight A Weighting  
Peak Weight A Weighting  
Detector Slow  
Preamp PRMLxT1L  
Microphone Correction Off  
Integration Method Exponential  
OBA Range Normal  
OBA Bandwidth 1/1 and 1/3  
OBA Freq. Weighting A Weighting  
OBA Max Spectrum Bin Max  
Overload 122.8 dB

	A	C	Z
Under Range Peak	79.4	76.4	81.4 dB
Under Range Limit	24.4	25.5	31.7 dB
Noise Floor	15.2	16.4	22.6 dB

## Results

LASeq 69.1 dB  
LASE 104.7 dB  
EAS 3.294 mPa<sup>2</sup>h  
LApeak (max) 17/05/2022 09:17:46 96.8 dB  
LASmax 17/05/2022 09:17:47 82.7 dB  
LASmin 17/05/2022 08:44:38 55.6 dB  
SEA -99.9 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	3	6.1 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LAPeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LAPeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LAPeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight 07:00- 22:00-		Lden	LDay	LEvening	LNight
		07:00- 22:00-	19:00- 22:00		07:00		
	69.1	69.1	-99.9	69.1	69.1	-99.9	-99.9
LCSeq	74.4 dB						
LASeq	69.1 dB						
LCSeq - LASeq	5.4 dB						
LAleq	71.0 dB						
LAeq	69.1 dB						
LAleq - LAeq	1.9 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Statistics	
LAS1.00	77.2 dB
LAS10.00	73.8 dB
LAS16.67	72.0 dB
LAS25.00	69.9 dB
LAS50.00	64.2 dB
LAS90.00	59.3 dB

#### Calibration History

		Date	dB re. 1V/Pa
Preamp			
Direct	28/01/2020	6:13:43	-26.4
Direct	27/01/2020	13:00:51	-29.0
PRMLxT1L	17/05/2022	9:33:24	-29.1
PRMLxT1L	17/05/2022	8:18:39	-29.1
PRMLxT1L	03/05/2022	9:49:03	-29.1
PRMLxT1L	03/05/2022	9:34:56	-29.0

<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>PRMLxT1L</b>	31/03/2022 11:26:36	-29.0
<b>PRMLxT1L</b>	31/03/2022 9:39:23	-29.1
<b>PRMLxT1L</b>	30/03/2022 18:58:45	-29.1
<b>PRMLxT1L</b>	30/03/2022 15:20:18	-29.0
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request.*



**Summary**

**Filename** LxT\_Data.078  
**Serial Number** 3790  
**Model** SoundExpert™ LxT  
**Firmware Version** 2.402

**User**  
**Location**  
**Job Description**

**Note**

**Measurement Description** Marin Co GP HE/SE EIR - RVSA 5/17-18/22  
**Start** 17/05/2022 11:00:00  
**Stop** 17/05/2022 15:04:09  
**Duration** 4:04:09.6  
**Run Time** 4:04:09.6  
**Pause** 0:00:00.0

**Pre Calibration** 17/05/2022 10:52:22  
**Post Calibration** 17/05/2022 15:05:07  
**Calibration Deviation** -0.04 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.8 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.4</b>	76.4	81.4 dB
<b>Under Range Limit</b>	<b>24.4</b>	25.5	31.7 dB
<b>Noise Floor</b>	15.2	16.4	22.6 dB

**Results**

**LASeq** 62.5 dB  
**LASE** 104.2 dB  
**EAS** 2.927 mPa<sup>2</sup>h  
**LApk (max)** 17/05/2022 13:30:49 124.2 dB  
**LASmax** 17/05/2022 13:30:49 92.8 dB  
**LASmin** 17/05/2022 12:01:37 24.5 dB  
**SEA** 134.2 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	4	9.4 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	1	1.3 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00-				
	62.6	62.6	-99.9	62.6	62.6	-99.9	-99.9
LCSeq	84.0 dB						
LASeq	62.5 dB						
LCSeq - LASeq	21.5 dB						
LAleq	69.9 dB						
LAeq	62.5 dB						
LAleq - LAeq	7.3 dB						
# Overloads	33						
Overload Duration	110.9 s						
# OBA Overloads	33						
OBA Overload Duration	110.9 s						

Statistics	
LAS1.00	72.5 dB
LAS10.00	67.1 dB
LAS16.67	64.9 dB
LAS25.00	61.9 dB
LAS50.00	51.9 dB
LAS90.00	42.2 dB

**Calibration History**

Preamp	Date	dB re. 1V/Pa
Direct	28/01/2020 6:13:43	-26.4
Direct	27/01/2020 13:00:51	-29.0
PRMLxT1L	17/05/2022 15:05:06	-29.1
PRMLxT1L	17/05/2022 10:52:22	-29.1
PRMLxT1L	17/05/2022 9:33:24	-29.1

<b>PRMLxT1L</b>	17/05/2022 8:18:39	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:49:03	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:34:56	-29.0
<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>PRMLxT1L</b>	31/03/2022 11:26:36	-29.0
<b>PRMLxT1L</b>	31/03/2022 9:39:23	-29.1
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request*

**Summary**

**Filename** LxT\_Data.079  
**Serial Number** 3790  
**Model** SoundExpert™ LxT  
**Firmware Version** 2.402  
**User**  
**Location**  
**Job Description**  
**Note**  
**Measurement Description** Marin Co GP HE/SE EIR - RVS 5/18/22  
**Start** 18/05/2022 08:50:00  
**Stop** 18/05/2022 12:58:24  
**Duration** 4:08:24.4  
**Run Time** 4:08:24.4  
**Pause** 0:00:00.0

**Pre Calibration** 18/05/2022 08:46:42  
**Post Calibration** 18/05/2022 12:59:02  
**Calibration Deviation** 0.00 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** Direct  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 120.1 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>76.4</b>	73.4	78.4 dB
<b>Under Range Limit</b>	<b>12.3</b>	10.8	15.1 dB
<b>Noise Floor</b>	3.2	1.7	6.0 dB

**Results**

**LASeq** 65.3 dB  
**LASE** 107.1 dB  
**EAS** 5.668 mPa<sup>2</sup>h  
**LAp<sub>peak</sub> (max)** 18/05/2022 12:42:50 120.8 dB  
**LAS<sub>max</sub>** 18/05/2022 12:42:50 88.9 dB  
**LAS<sub>min</sub>** 18/05/2022 11:01:48 23.9 dB  
**SEA** 133.6 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	19	39.4 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00				
	65.3	65.3	-99.9	65.3	65.3	-99.9	-99.9
LCSeq	82.1 dB						
LASeq	65.3 dB						
LCSeq - LASeq	16.7 dB						
LAleq	70.9 dB						
LAeq	65.3 dB						
LAleq - LAeq	5.6 dB						
# Overloads	20						
Overload Duration	43.0 s						
# OBA Overloads	20						
OBA Overload Duration	43.0 s						

Statistics	
LAS1.00	76.3 dB
LAS10.00	69.2 dB
LAS16.67	66.3 dB
LAS25.00	63.1 dB
LAS50.00	58.1 dB
LAS90.00	45.4 dB

#### Calibration History

Preamp	Date	dB re. 1V/Pa
Direct	28/01/2020 6:13:43	-26.4
Direct	27/01/2020 13:00:51	-29.0
PRMLxT1L	18/05/2022 12:58:50	-29.0
PRMLxT1L	18/05/2022 8:46:41	-29.0
PRMLxT1L	17/05/2022 15:05:06	-29.1
PRMLxT1L	17/05/2022 10:52:22	-29.1

<b>PRMLxT1L</b>	17/05/2022 9:33:24	-29.1
<b>PRMLxT1L</b>	17/05/2022 8:18:39	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:49:03	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:34:56	-29.0
<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request.*

## Marin County Housing and Safety Element Marin County, California

### Technical Noise Appendix

Prepared by: MIG, Inc.

August 2022

#### Appendix Contents

<a href="#">Sheet 1</a>	ADT and DNL Comparison
<a href="#">Sheet 2</a>	TNM 3.1 Roadway Geometry Information
<a href="#">Sheet 3</a>	2019 No Project Traffic Noise Contours
<a href="#">Sheet 4</a>	2019 No Project Traffic Percentatges
<a href="#">Sheet 5</a>	2019 No Project Traffic Volumes
<a href="#">Sheet 6</a>	2019 Project Traffic Noise Contours
<a href="#">Sheet 7</a>	2019 Project Traffic Percentatges
<a href="#">Sheet 8</a>	2019 Project Traffic Volumes
<a href="#">Sheet 9</a>	2040 No Project Traffic Noise Contours
<a href="#">Sheet 10</a>	2040 No Project Traffic Percentatges
<a href="#">Sheet 11</a>	2040 No Project Traffic Volumes
<a href="#">Sheet 12</a>	2040 Project Traffic Noise Contours
<a href="#">Sheet 13</a>	2040 Project Traffic Percentatges
<a href="#">Sheet 14</a>	2040 Project Traffic Volumes
<a href="#">Sheet 15</a>	2019 Road Segment Volumes WITH Housing Element

Sheet 1: ADT and DNL Comparison

Road and Segment	2019 No Project		2040 No Project		Net Change (2040 No Project to 2019 No Project)		2040 Project		Net Change (2040 Project to 2019)		Net Change (2040 Project to 2040 NP)	
	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft
Atherton Avenue												
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	62.9	5,321	63.5	524	0.6	5,765	64.0	968	1.1	444	0.5
Butterfield Road												
Northern terminus to Sir Francis Drake Blvd	1,182	52.5	1,137	52.7	-46	0.2	1,202	52.9	20	0.4	65	0.2
Center Boulevard												
Claus Drive to Sir Francis Drake Boulevard	15,074	64.8	16,170	65.0	1,096	0.2	16,827	65.2	1,753	0.4	657	0.2
College Avenue												
Sir Francis Drake Blvd to Estelle Ave	8,210	59.2	8,412	59.5	202	0.3	8,992	59.6	783	0.4	581	0.1
Corte Madera Avenue												
Bahr Lane to Redwood Ave	11,573	60.9	11,211	60.7	-362	-0.2	11,449	60.6	-124	-0.3	238	-0.1
Las Galinas Avenue												
Miller Creek Rd to Lucas Valley Rd	6,596	59.6	5,399	58.9	-1,196	-0.7	4,992	58.3	-1,603	-1.3	-407	-0.6
Lucas Valley Rd to Freitas Pkwy	6,230	58.8	7,421	59.3	1,191	0.5	7,683	59.5	1,453	0.7	262	0.2
Freitas Pkwy to Northgate Dr	5,502	58.1	3,831	56.3	-1,671	-1.8	7,615	59.1	2,112	1	3,783	2.8



Lucas Valley Road												
Nicasio Valley Rd to Mt McKinley Rd	1,548	54.1	4,288	58.9	2,740	4.8	4,210	58.7	2,662	4.6	-78	-0.2
Mt McKinley Rd to Mt Muir Ct	2,975	60.7	5,590	63.3	2,616	2.6	5,563	63.2	2,588	2.5	-27	-0.1
Mt. Muir Court to Huckleberry Road	4,045	62.9	6,546	64.8	2,501	1.9	6,724	64.8	2,678	1.9	178	0.0
Huckleberry Rd to U.S. 101	4,113	62.1	5,692	63.4	1,578	1.3	7,113	64.3	3,000	2.2	1,422	0.9
Magnolia Avenue												
Estelle Ave to Doherty Dr	9,395	60	9,886	60.3	491	0.3	10,136	60.2	741	0.2	250	-0.1
Doherty Dr to Bahr Ln	8,414	60.4	10,429	61.5	2,016	1.1	10,818	61.5	2,404	1.1	388	0.0
Miller Creek Road												
Lucas Valley Rd to Las Galinas Ave	569	48.8	1,649	53.3	1,081	4.5	2,460	54.7	1,891	5.9	810	1.4
Las Galinas Ave to U.S. 101	7,479	59.1	6,586	58.8	-892	-0.3	7,979	59.1	500	0	1,393	0.3
Nicasio Valley Road												
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	60.9	4,716	64.8	2,619	3.9	4,779	64.9	2,682	4	63	0.1
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	56.4	1,189	56.8	89	0.4	1,322	57.3	223	0.9	133	0.5
North San Pedro Road												
U.S. 101 to Bucks Landing	6,754	58.7	7,790	59.2	1,036	0.5	8,316	57.3	1,562	-1.4	526	-1.9

Novato Boulevard												
Pt. Reyes Petaluma Rd to Indian Valley	4,502	63.6	6,123	65.0	1,621	1.4	6,870	65.8	2,368	2.2	747	0.8
Indian Valley to San Marin Dr	5,872	63.6	7,146	64.4	1,274	0.8	8,209	65.2	2,337	1.6	1,063	0.8
San Marin Dr to Simmons Lane	9,263	63.3	10,176	63.6	913	0.3	11,411	64.1	2,148	0.8	1,235	0.5
Simmons Lane to Diablo Ave	9,263	65.7	10,176	66.0	913	0.3	11,411	66.5	2,148	0.8	1,235	0.5
Diablo Ave to Rowland Blvd	4,251	60.3	5,595	61.3	1,344	1.0	6,045	61.7	1,794	1.4	450	0.4
Rowland Blvd to U.S. 101	4,251	60.3	5,595	61.3	1,344	1.0	6,045	61.6	1,794	1.3	450	0.3
Petaluma Point Reyes Road												
San Antonio Rd to Novato Blvd	2,172	61.7	4,868	65.0	2,696	3.3	4,888	65.2	2,715	3.5	20	0.2
Novato Blvd to Nicasio Valley Rd	3,224	62.4	5,833	64.9	2,609	2.5	6,002	65.0	2,778	2.6	169	0.1
Nicasio Valley Rd to Shoreline Hwy	3,141	61.2	4,224	63.3	1,082	2.1	5,651	64.1	2,510	2.9	1,428	0.8
Red Hill Avenue												
Sir Francis Drake Blvd to Ross Valley Dr	26,746	68.9	27,369	69.1	623	0.2	28,310	69.3	1,564	0.4	941	0.2
San Marin Drive												
Novato Blvd to U.S. 101	5,044	61.7	4,602	61.7	-441	0.0	5,143	62.2	99	0.5	541	0.5

Sir Francis Drake Boulevard												
SR 1 to Platform Bridge Rd	3,328	62.8	4,043	64.2	714	1.4	4,896	65.5	1,567	2.7	853	1.3
Platform Bridge Rd to Lagunitas Rd	3,279	59.3	4,043	60.2	764	0.9	4,737	61.5	1,458	2.2	695	1.3
Lagunitas Rd to Nicasio Valley Rd	4,108	58.5	5,095	59.5	987	1.0	6,101	60.8	1,993	2.3	1,006	1.3
Nicasio Valley Rd to Olema Rd	6,543	61.3	7,270	61.8	727	0.5	8,855	62.9	2,312	1.6	1,586	1.1
Olema Rd to Red Hill Ave	13,764	63.3	14,466	63.5	702	0.2	15,605	63.9	1,840	0.6	1,139	0.4
Redwood Avenue												
Corte Madera Ave to Tamalpais Dr	10,242	60.1	10,587	60.2	345	0.1	10,720	60.1	478	0	133	-0.1
Tamalpais Drive												
Redwood Ave to U.S. 101	12,446	63.8	12,611	60.2	165	-3.6	13,205	63.9	760	0.1	594	3.7
Tomales Petaluma Road												
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	63.2	2,882	64.0	537	0.8	3,251	64.3	906	1.1	369	0.3
2 <sup>nd</sup> Street												
4 <sup>th</sup> St to 3rd St	21,990	67.8	25,193	68.6	3,203	0.8	26,132	68.8	4,142	1	939	0.2
3rd St to Hetheron St	21,990	64.5	25,193	65.3	3,203	0.8	26,132	65.5	4,142	1	939	0.2
4 <sup>th</sup> Street												
Red Hill Ave to 2 <sup>nd</sup> St	28,964	70.3	29,400	70.6	436	0.3	30,222	70.7	1,258	0.4	821	0.1
I-580												
U.S. 101 to County Limit	70,080	79.5	83,410	80.1	13,330	0.6	88,876	80.4	18,796	0.9	5,466	0.3

SR-1												
North County Limit to Tomales Petaluma Rd	2,526	62.8	4,032	64.4	1,505	1.6	4,512	64.9	1,986	2.1	480	0.5
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	61.1	3,970	64.3	1,590	3.2	4,053	64.6	1,673	3.5	83	0.3
Pt Reyes Petaluma Rd to A St	3,913	54.9	5,465	56.9	1,551	2.0	5,864	57.1	1,951	2.2	400	0.2
A Street to Sir Francis Drake Blvd	3,755	57.5	5,585	60.2	1,830	2.7	6,224	60.7	2,469	3.2	639	0.5
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	58.8	4,439	60.6	864	1.8	5,119	61.6	1,544	2.8	680	1.0
Sir Francis Drake Blvd to County Limit	12,978	70.5	15,154	70.9	2,176	0.4	15,728	71.0	2,750	0.5	574	0.1
SR-37												
U.S. 101 to Atherton Ave	31,900	77.6	29,807	78.0	-2,093	0.4	39,482	78.3	7,582	0.7	9,675	0.3
Atherton Ave to County Limit	33,800	75.3	41,306	75.8	7,506	0.5	39,483	76.1	5,683	0.8	-1,823	0.3
SR-131												
U.S. 101 to Trestle Glen Blvd	34,275	73.3	35,956	73.6	1,681	0.3	37,355	73.7	3,080	0.4	1,399	0.1

## Sheet 2: TNM 3.1 Roadway Geometry Information

Road and Segment	Average Road Width	Posted Vehicle Speed
Atherton Avenue		
U.S. 101 to SR 37 (Sears Pt. Rd)	34	40
Butterfield Road		
Northern terminus to Sir Francis Drake Blvd	40	30
Center Boulevard		
Claus Drive to Sir Francis Drake Boulevard	23	30
College Avenue		
Sir Francis Drake Blvd to Estelle Ave	43	25
Corte Madera Avenue		
Bahr Lane to Redwood Ave	37	25
Las Galinas Avenue		
Miller Creek Rd to Lucas Valley Rd	60	25
Lucas Valley Rd to Freitas Pkwy	78	25
Freitas Pkwy to Northgate Dr	45	25
Lucas Valley Road		
Nicasio Valley Rd to Mt McKinley Rd	34	35
Mt McKinley Rd to Mt Muir Ct	38	45
Mt. Muir Court to Huckleberry Road	36	45
Huckleberry Rd to U.S. 101	39	45
Magnolia Avenue		
Estelle Ave to Doherty Dr	80	25
Doherty Dr to Bahr Ln	40	25
Miller Creek Road		
Lucas Valley Rd to Las Galinas Ave	84	25
Las Galinas Ave to U.S. 101	84	25
Nicasio Valley Road		
Pt Reyes Petaluma Rd to Lucas Valley Rd	38	55
Lucas Valley Rd to Sir Francis Drake Blvd	23	45
North San Pedro Road		
U.S. 101 to Bucks Landing	40	25
Novato Boulevard		
Pt. Reyes Petaluma Rd to Indian Valley	22	50
Indian Valley to San Marin Dr	22	45
San Marin Dr to Simmons Lane	60	35
Simmons Lane to Diablo Ave	30	40
Diablo Ave to Rowland Blvd	75	40
Rowland Blvd to U.S. 101	40	35

Petaluma Point Reyes Road		
San Antonio Rd to Novato Blvd	25	55
Novato Blvd to Nicasio Valley Rd	25	50
Nicasio Valley Rd to Shoreline Hwy	25	50
Red Hill Avenue		
Sir Francis Drake Blvd to Ross Valley Dr	85	35
San Marin Drive		
Novato Blvd to U.S. 101	70	35
Sir Francis Drake Boulevard		
SR 1 to Platform Bridge Rd	23	55
Platform Bridge Rd to Lagunitas Rd	25	40
Lagunitas Rd to Nicasio Valley Rd	30	35
Nicasio Valley Rd to Olema Rd	30	35
Olema Rd to Red Hill Ave	40	30
Redwood Avenue		
Corte Madera Ave to Tamalpais Dr	50	25
Tamalpais Drive		
Redwood Ave to U.S. 101	75	30
Tomales Petaluma Road		
SR 1 to Valley Ford Rd/Spring Hill Rd	24	55
2 <sup>nd</sup> Street		
4 <sup>th</sup> St to 3rd St	70	35
3rd St to Hetherton St	40	25
4 <sup>th</sup> Street		
Red Hill Ave to 2 <sup>nd</sup> St	90	35
U.S. 101		
County Limit to SR 37	110	65
SR 37 to I-580	110	65
I-580 to County Limit	110	65
I-580		
U.S. 101 to County Limit	100	55
SR-1		
North County Limit to Tomales Petaluma Rd	20	55
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	20	55
Pt Reyes Petaluma Rd to A St	30	25
A Street to Sir Francis Drake Blvd	30	35
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	25	40
Sir Francis Drake Blvd to County Limit	25	55
SR-37		
U.S. 101 to Atherton Ave	115	65
Atherton Ave to County Limit	95	55
SR-131		
U.S. 101 to Trestle Glen Blvd	82	45

## Sheet 3: 2019 No Project Traffic Noise Contours

Road and Segment	Estimated DNL 50 Feet from Road Center Line	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
Atherton Avenue					
U.S. 101 to SR 37 (Sears Pt. Rd)	62.9	3	10	31	97
Butterfield Road					
Northern terminus to Sir Francis Drake Blvd	52.5	0	1	3	9
Center Boulevard					
Claus Drive to Sir Francis Drake Boulevard	64.8	5	15	48	151
College Avenue					
Sir Francis Drake Blvd to Estelle Ave	59.2	1	4	13	42
Corte Madera Avenue					
Bahr Lane to Redwood Ave	60.9	2	6	19	62
Las Galinas Avenue					
Miller Creek Rd to Lucas Valley Rd	59.6	1	5	14	46
Lucas Valley Rd to Freitas Pkwy	58.8	1	4	12	38
Freitas Pkwy to Northgate Dr	58.1	1	3	10	32
Lucas Valley Road					
Nicasio Valley Rd to Mt McKinley Rd	54.1	0	1	4	13
Mt McKinley Rd to Mt Muir Ct	60.7	2	6	19	59
Mt. Muir Court to Huckleberry Road	62.9	3	10	31	97
Huckleberry Rd to U.S. 101	62.1	3	8	26	81
Magnolia Avenue					
Estelle Ave to Doherty Dr	60	2	5	16	50
Doherty Dr to Bahr Ln	60.4	2	5	17	55
Miller Creek Road					
Lucas Valley Rd to Las Galinas Ave	48.8	0	0	1	4
Las Galinas Ave to U.S. 101	59.1	1	4	13	41
Nicasio Valley Road					
Pt Reyes Petaluma Rd to Lucas Valley Rd	60.9	2	6	19	62
Lucas Valley Rd to Sir Francis Drake Blvd	56.4	1	2	7	22
North San Pedro Road					
U.S. 101 to Bucks Landing	58.7	1	4	12	37

Novato Boulevard					
Pt. Reyes Petaluma Rd to Indian Valley	63.6	4	11	36	115
Indian Valley to San Marin Dr	63.6	4	11	36	115
San Marin Dr to Simmons Lane	63.3	3	11	34	107
Simmons Lane to Diablo Ave	65.7	6	19	59	186
Diablo Ave to Rowland Blvd	60.3	2	5	17	54
Rowland Blvd to U.S. 101	60.3	2	5	17	54
Petaluma Point Reyes Road					
San Antonio Rd to Novato Blvd	61.7	2	7	23	74
Novato Blvd to Nicasio Valley Rd	62.4	3	9	27	87
Nicasio Valley Rd to Shoreline Hwy	61.2	2	7	21	66
Red Hill Avenue					
Sir Francis Drake Blvd to Ross Valley Dr	68.9	12	39	123	388
San Marin Drive					
Novato Blvd to U.S. 101	61.7	2	7	23	74
Sir Francis Drake Boulevard					
SR 1 to Platform Bridge Rd	62.8	3	10	30	95
Platform Bridge Rd to Lagunitas Rd	59.3	1	4	13	43
Lagunitas Rd to Nicasio Valley Rd	58.5	1	4	11	35
Nicasio Valley Rd to Olema Rd	61.3	2	7	21	67
Olema Rd to Red Hill Ave	63.3	3	11	34	107
Redwood Avenue					
Corte Madera Ave to Tamalpais Dr	60.1	2	5	16	51
Tamalpais Drive					
Redwood Ave to U.S. 101	63.8	4	12	38	120
Tomaes Petaluma Road					
SR 1 to Valley Ford Rd/Spring Hill Rd	63.2	3	10	33	104
2 <sup>nd</sup> Street					
4 <sup>th</sup> St to 3rd St	67.8	10	30	95	301
3rd St to Hetherton St	64.5	4	14	45	141
4 <sup>th</sup> Street					
Red Hill Ave to 2 <sup>nd</sup> St	70.3	17	54	169	536
U.S. 101					
County Limit to SR 37	79.5	141	446	1,409	4,456
SR 37 to I-580	81	199	629	1,991	6,295
I-580 to County Limit	80.3	169	536	1,694	5,358
I-580					
U.S. 101 to County Limit	79.5	141	446	1,409	4,456



SR-1					
North County Limit to Tomales Petaluma Rd	<b>62.8</b>	3	10	30	95
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	<b>61.1</b>	2	6	20	64
Pt Reyes Petaluma Rd to A St	<b>54.9</b>	0	2	5	15
A Street to Sir Francis Drake Blvd	<b>57.5</b>	1	3	9	28
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	<b>58.8</b>	1	4	12	38
Sir Francis Drake Blvd to County Limit	<b>70.5</b>	18	56	177	561

SR-37					
U.S. 101 to Atherton Ave	<b>77.6</b>	91	288	910	2,877
Atherton Ave to County Limit	<b>75.3</b>	54	169	536	1,694
SR-131					
U.S. 101 to Trestle Glen Blvd	<b>73.3</b>	34	107	338	1,069
SMART Rail Corridor					
Commuter Corridor	<b>66</b>	6	20	63	199
Brazos Branch Line	<b>64</b>	4	13	40	126

Sheet 4: 2019 No Project Traffic Percentages

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue											
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	86.0%	14.0%	83.5%	13.9%	0.2%	2.4%	87.16%	9.95%	0.40%	2.48%
Butterfield Road											
Northern terminus to Sir Francis Drake Blvd	1,182	86.8%	13.2%	90.2%	7.2%	0.0%	2.6%	91.89%	5.49%	0.01%	2.62%
Center Boulevard											
Claus Drive to Sir Francis Drake Boulevard	15,074	81.6%	18.4%	87.6%	9.8%	0.0%	2.5%	88.86%	8.54%	0.07%	2.53%
College Avenue											
Sir Francis Drake Blvd to Estelle Ave	8,210	88.6%	11.4%	88.5%	8.9%	0.0%	2.5%	91.31%	6.07%	0.01%	2.60%
Corte Madera Avenue											
Bahr Lane to Redwood Ave	11,573	87.3%	12.7%	85.6%	11.9%	0.1%	2.4%	88.91%	8.47%	0.08%	2.53%
Las Galinas Avenue											
Miller Creek Rd to Lucas Valley Rd	6,596	88.8%	11.2%	85.4%	12.0%	0.2%	2.4%	88.44%	8.74%	0.30%	2.52%
Lucas Valley Rd to Freitas Pkwy	6,230	87.2%	12.8%	88.7%	8.6%	0.2%	2.5%	90.36%	6.92%	0.14%	2.58%
Freitas Pkwy to Northgate Dr	5,502	87.8%	12.2%	87.8%	9.6%	0.1%	2.5%	89.05%	8.24%	0.18%	2.54%
Lucas Valley Road											
Nicasio Valley Rd to Mt McKinley Rd	1,548	91.3%	8.7%	92.6%	4.6%	0.1%	2.6%	94.23%	3.01%	0.08%	2.69%
Mt McKinley Rd to Mt Muir Ct	2,975	88.4%	11.6%	90.7%	6.7%	0.1%	2.6%	91.78%	5.57%	0.04%	2.62%
Mt. Muir Court to Huckleberry Road	4,045	87.7%	12.3%	89.0%	8.4%	0.1%	2.5%	90.51%	6.87%	0.04%	2.58%
Huckleberry Rd to U.S. 101	4,113	88.3%	11.7%	86.5%	10.9%	0.1%	2.5%	88.11%	9.28%	0.10%	2.51%
Magnolia Avenue											
Estelle Ave to Doherty Dr	9,395	88.9%	11.1%	86.9%	10.6%	0.0%	2.5%	91.32%	6.04%	0.04%	2.60%
Doherty Dr to Bahr Ln	8,414	88.0%	12.0%	86.1%	11.4%	0.1%	2.5%	89.78%	7.57%	0.09%	2.56%

Miller Creek Road											
Lucas Valley Rd to Las Galinas Ave	569	90.1%	9.9%	84.3%	13.2%	0.0%	2.4%	88.09%	9.33%	0.07%	2.51%
Las Galinas Ave to U.S. 101	7,479	89.1%	10.9%	85.2%	12.2%	0.2%	2.4%	89.13%	8.12%	0.20%	2.54%
Nicasio Valley Road											
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	90.2%	9.8%	94.5%	2.7%	0.1%	2.7%	95.99%	1.22%	0.05%	2.74%
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	87.5%	12.5%	96.5%	0.8%	0.0%	2.7%	96.78%	0.45%	0.00%	2.76%
North San Pedro Road											
U.S. 101 to Bucks Landing	6,754	87.5%	12.5%	88.3%	9.1%	0.1%	2.5%	90.58%	6.74%	0.10%	2.58%
Novato Boulevard											
Pt. Reyes Petaluma Rd to Indian Valley	4,502	88.0%	12.0%	91.6%	5.7%	0.1%	2.6%	92.80%	4.47%	0.09%	2.65%
Indian Valley to San Marin Dr	5,872	87.3%	12.7%	90.3%	7.1%	0.1%	2.6%	91.77%	5.54%	0.07%	2.62%
San Marin Dr to Simmons Lane	9,263	86.1%	13.9%	88.2%	9.3%	0.0%	2.5%	90.36%	7.02%	0.04%	2.58%
Simmons Lane to Diablo Ave	9,263	86.1%	13.9%	88.2%	9.3%	0.0%	2.5%	90.36%	7.02%	0.04%	2.58%
Diablo Ave to Rowland Blvd	4,251	87.3%	12.7%	86.0%	11.5%	0.1%	2.5%	88.40%	9.00%	0.08%	2.52%
Rowland Blvd to U.S. 101	4,251	87.3%	12.7%	86.0%	11.5%	0.1%	2.5%	88.40%	9.00%	0.08%	2.52%
Petaluma Point Reyes Road											
San Antonio Rd to Novato Blvd	2,172	90.4%	9.6%	85.4%	11.7%	0.5%	2.4%	84.91%	11.62%	1.05%	2.42%
Novato Blvd to Nicasio Valley Rd	3,224	88.6%	11.4%	90.0%	7.2%	0.2%	2.6%	91.20%	5.85%	0.36%	2.60%
Nicasio Valley Rd to Shoreline Hwy	3,141	90.7%	9.3%	90.9%	6.3%	0.2%	2.6%	91.66%	5.41%	0.31%	2.61%
Red Hill Avenue											
Sir Francis Drake Blvd to Ross Valley Dr	26,746	86.5%	13.5%	85.8%	11.7%	0.1%	2.4%	89.04%	8.32%	0.10%	2.54%
San Marin Drive											
Novato Blvd to U.S. 101	5,044	86.4%	13.6%	86.3%	11.2%	0.1%	2.5%	88.73%	8.63%	0.11%	2.53%

Sir Francis Drake Boulevard											
SR 1 to Platform Bridge Rd	3,328	90.9%	9.1%	92.9%	4.2%	0.2%	2.6%	93.99%	3.20%	0.13%	2.68%
Platform Bridge Rd to Lagunitas Rd	3,279	87.7%	12.3%	93.3%	3.9%	0.1%	2.7%	94.96%	2.27%	0.07%	2.71%
Lagunitas Rd to Nicasio Valley Rd	4,108	87.4%	12.6%	92.9%	4.3%	0.1%	2.6%	94.48%	2.77%	0.05%	2.69%
Nicasio Valley Rd to Olema Rd	6,543	86.4%	13.6%	92.1%	5.2%	0.1%	2.6%	93.69%	3.61%	0.03%	2.67%
Olema Rd to Red Hill Ave	13,764	89.1%	10.9%	86.6%	10.9%	0.0%	2.5%	91.17%	6.17%	0.05%	2.60%
Redwood Avenue											
Corte Madera Ave to Tamalpais Dr	10,242	88.9%	11.1%	84.8%	12.8%	0.1%	2.4%	89.08%	8.30%	0.08%	2.54%
Tamalpais Drive											
Redwood Ave to U.S. 101	12,446	88.4%	11.6%	84.3%	13.2%	0.1%	2.4%	88.12%	9.26%	0.11%	2.51%
Tomales Petaluma Road											
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	85.0%	15.0%	86.0%	11.4%	0.2%	2.5%	89.60%	7.60%	0.25%	2.55%
2 <sup>nd</sup> Street											
4 <sup>th</sup> St to 3rd St	21,990	87.9%	12.1%	84.4%	13.2%	0.1%	2.4%	88.88%	8.50%	0.08%	2.53%
3rd St to Hetheron St	21,990	87.9%	12.1%	84.4%	13.2%	0.1%	2.4%	88.88%	8.50%	0.08%	2.53%
4 <sup>th</sup> Street											
Red Hill Ave to 2 <sup>nd</sup> St	28,964	86.8%	13.2%	85.4%	12.1%	0.1%	2.4%	88.76%	8.61%	0.10%	2.53%
U.S. 101											
County Limit to SR 37	102,000	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	180,934	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	142,500	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%
I-580											
U.S. 101 to County Limit	70,080	79.6%	20.4%	83.9%	13.6%	0.2%	2.4%	91.41%	5.79%	0.19%	2.61%

SR-1											
North County Limit to Tomales Petaluma Rd	2,526	92.1%	7.9%	90.6%	0.9%	5.9%	2.6%	88.71%	1.27%	7.49%	2.53%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	92.9%	7.1%	95.1%	1.9%	0.3%	2.7%	94.94%	2.09%	0.27%	2.71%
Pt Reyes Petaluma Rd to A St	3,913	92.1%	7.9%	92.6%	4.5%	0.2%	2.6%	91.97%	5.05%	0.35%	2.62%
A Street to Sir Francis Drake Blvd	3,755	92.5%	7.5%	92.8%	4.3%	0.2%	2.6%	92.89%	4.24%	0.22%	2.65%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	92.8%	7.2%	93.1%	4.0%	0.2%	2.7%	93.49%	3.67%	0.18%	2.66%
Sir Francis Drake Blvd to County Limit	12,978	86.0%	14.0%	86.3%	11.0%	0.2%	2.5%	89.78%	7.39%	0.27%	2.56%
SR-37											
U.S. 101 to Atherton Ave	31,900	85.0%	15.0%	85.9%	11.0%	0.7%	2.5%	88.78%	7.67%	1.02%	2.53%
Atherton Ave to County Limit	33,800	84.9%	15.2%	85.5%	11.4%	0.7%	2.4%	88.65%	7.81%	1.01%	2.53%
SR-131											
U.S. 101 to Trestle Glen Blvd	34,275	86.6%	13.4%	82.3%	15.2%	0.1%	2.4%	85.51%	11.90%	0.15%	2.44%

## Sheet 5: 2019 No Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue									
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	3,443	574	9	98	586	67	3	17
Butterfield Road									
Northern terminus to Sir Francis Drake Blvd	1,182	926	74	0	26	143	9	0	4
Center Boulevard									
Claus Drive to Sir Francis Drake Boulevard	15,074	10,779	1,207	5	307	2,466	237	2	70
College Avenue									
Sir Francis Drake Blvd to Estelle Ave	8,210	6,438	648	2	184	856	57	0	24
Corte Madera Avenue									
Bahr Lane to Redwood Ave	11,573	8,642	1,203	5	246	1,312	125	1	37
Las Galinas Avenue									
Miller Creek Rd to Lucas Valley Rd	6,596	4,999	700	12	142	656	65	2	19
Lucas Valley Rd to Freitas Pkwy	6,230	4,818	467	9	137	722	55	1	21
Freitas Pkwy to Northgate Dr	5,502	4,245	462	6	121	595	55	1	17
Lucas Valley Road									
Nicasio Valley Rd to Mt McKinley Rd	1,548	1,310	65	2	37	126	4	0	4
Mt McKinley Rd to Mt Muir Ct	2,975	2,384	175	2	68	318	19	0	9
Mt. Muir Court to Huckleberry Road	4,045	3,158	298	2	90	450	34	0	13
Huckleberry Rd to U.S. 101	4,113	3,144	397	3	90	423	45	0	12
Magnolia Avenue									
Estelle Ave to Doherty Dr	9,395	7,256	887	4	207	951	63	0	27
Doherty Dr to Bahr Ln	8,414	6,372	846	4	182	907	76	1	26
Miller Creek Road									
Lucas Valley Rd to Las Galinas Ave	569	432	68	0	12	50	5	0	1
Las Galinas Ave to U.S. 101	7,479	5,674	815	10	162	729	66	2	21
Nicasio Valley Road									
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	1,788	51	2	51	197	3	0	6
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	928	8	0	26	133	1	0	4
North San Pedro Road									
U.S. 101 to Bucks Landing	6,754	5,218	536	4	149	767	57	1	22

Novato Boulevard									
Pt. Reyes Petaluma Rd to Indian Valley	4,502	3,632	225	3	104	500	24	0	14
Indian Valley to San Marin Dr	5,872	4,630	363	3	132	682	41	1	19
San Marin Dr to Simmons Lane	9,263	7,031	741	3	200	1,163	90	1	33
Simmons Lane to Diablo Ave	9,263	7,031	741	3	200	1,163	90	1	33
Diablo Ave to Rowland Blvd	4,251	3,190	428	2	91	477	49	0	14
Rowland Blvd to U.S. 101	4,251	3,190	428	2	91	477	49	0	14
Petaluma Point Reyes Road									
San Antonio Rd to Novato Blvd	2,172	1,676	230	10	48	178	24	2	5
Novato Blvd to Nicasio Valley Rd	3,224	2,569	207	6	73	336	22	1	10
Nicasio Valley Rd to Shoreline Hwy	3,141	2,590	181	6	74	267	16	1	8
Red Hill Avenue									
Sir Francis Drake Blvd to Ross Valley Dr	26,746	19,847	2,704	14	566	3,218	301	4	92
San Marin Drive									
Novato Blvd to U.S. 101	5,044	3,759	488	3	107	609	59	1	17
Sir Francis Drake Boulevard									
SR 1 to Platform Bridge Rd	3,328	2,811	128	5	80	285	10	0	8
Platform Bridge Rd to Lagunitas Rd	3,279	2,685	112	3	77	382	9	0	11
Lagunitas Rd to Nicasio Valley Rd	4,108	3,336	156	3	95	489	14	0	14
Nicasio Valley Rd to Olema Rd	6,543	5,210	293	3	148	833	32	0	24
Olema Rd to Red Hill Ave	13,764	10,622	1,339	6	303	1,363	92	1	39
Redwood Avenue									
Corte Madera Ave to Tamalpais Dr	10,242	7,714	1,161	7	220	1,017	95	1	29
Tamalpais Drive									
Redwood Ave to U.S. 101	12,446	9,279	1,454	9	264	1,268	133	2	36
Tomales Petaluma Road									
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	1,714	227	4	49	315	27	1	9
2 <sup>nd</sup> Street									
4 <sup>th</sup> St to 3rd St	21,990	16,298	2,545	14	465	2,373	227	2	68
3rd St to Hetherton St	21,990	16,298	2,545	14	465	2,373	227	2	68
4 <sup>th</sup> Street									
Red Hill Ave to 2 <sup>nd</sup> St	28,964	21,460	3,053	16	612	3,394	329	4	97
U.S. 101									
County Limit to SR 37	<b>102,000</b>	68,589	9,228	514	1,960	19,755	1,208	158	564
SR 37 to I-580	<b>180,934</b>	127,689	16,146	652	3,644	30,573	2,040	190	0
I-580 to County Limit	<b>142,500</b>	101,534	12,101	398	2,900	23,295	1,509	110	665
I-580									
U.S. 101 to County Limit	70,080	46,797	7,570	84	1,333	13,068	828	27	373



SR-1									
North County Limit to Tomales Petaluma Rd	2,526	2,109	20	138	60	176	3	15	5
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	2,103	42	7	60	160	4	0	5
Pt Reyes Petaluma Rd to A St	3,913	3,338	163	9	95	284	16	1	8
A Street to Sir Francis Drake Blvd	3,755	3,223	151	8	92	262	12	1	7
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	3,089	134	7	88	240	9	0	7
Sir Francis Drake Blvd to County Limit	12,978	9,638	1,227	23	275	1,630	134	5	46
SR-37									
U.S. 101 to Atherton Ave	23,281	2,972	201	664	24,076	4,245	367	49	121
Atherton Ave to County Limit	33,800	3,269	201	688	25,424	4,540	400	52	130
SR-131									
U.S. 101 to Trestle Glen Blvd	34,275	24,437	4,517	27	697	3,930	547	7	112

## Sheet 6: 2019 Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
Atherton Avenue					
U.S. 101 to SR 37 (Sears Pt. Rd)	63.5	4	11	35	112
Butterfield Road					
Northern terminus to Sir Francis Drake Blvd	52.7	0	1	3	9
Center Boulevard					
Claus Drive to Sir Francis Drake Boulevard	64.9	5	15	49	155
College Avenue					
Sir Francis Drake Blvd to Estelle Ave	59.2	1	4	13	42
Corte Madera Avenue					
Bahr Lane to Redwood Ave	60.6	2	6	18	57
Las Galinas Avenue					
Miller Creek Rd to Lucas Valley Rd	60.4	2	5	17	55
Lucas Valley Rd to Freitas Pkwy	59.5	1	4	14	45
Freitas Pkwy to Northgate Dr	58.8	1	4	12	38
Lucas Valley Road					
Nicasio Valley Rd to Mt McKinley Rd	56.4	1	2	7	22
Mt McKinley Rd to Mt Muir Ct	61.6	2	7	23	72
Mt. Muir Court to Huckleberry Road	63.5	4	11	35	112
Huckleberry Rd to U.S. 101	63.9	4	12	39	123
Magnolia Avenue					
Estelle Ave to Doherty Dr	60.1	2	5	16	51
Doherty Dr to Bahr Ln	61.3	2	7	21	67
Miller Creek Road					
Lucas Valley Rd to Las Galinas Ave	50.8	0	1	2	6
Las Galinas Ave to U.S. 101	59.9	2	5	15	49
Nicasio Valley Road					
Pt Reyes Petaluma Rd to Lucas Valley Rd	61.9	2	8	24	77
Lucas Valley Rd to Sir Francis Drake Blvd	57.1	1	3	8	26
North San Pedro Road					
U.S. 101 to Bucks Landing	59.5	1	4	14	45
Novato Boulevard					
Pt. Reyes Petaluma Rd to Indian Valley	64.2	4	13	42	132
Indian Valley to San Marin Dr	64.2	4	13	42	132
San Marin Dr to Simmons Lane	63.4	3	11	35	109
Simmons Lane to Diablo Ave	65.8	6	19	60	190
Diablo Ave to Rowland Blvd	60.5	2	6	18	56
Rowland Blvd to U.S. 101	60.5	2	6	18	56
Petaluma Point Reyes Road					
San Antonio Rd to Novato Blvd	63	3	10	32	100
Novato Blvd to Nicasio Valley Rd	63.4	3	11	35	109

Nicasio Valley Rd to Shoreline Hwy	62.4	3	9	27	87
Red Hill Avenue					
Sir Francis Drake Blvd to Ross Valley Dr	69.1	13	41	129	406
San Marin Drive					
Novato Blvd to U.S. 101	61.8	2	8	24	76
Sir Francis Drake Boulevard					
SR 1 to Platform Bridge Rd	64	4	13	40	126
Platform Bridge Rd to Lagunitas Rd	60	2	5	16	50
Lagunitas Rd to Nicasio Valley Rd	59.2	1	4	13	42
Nicasio Valley Rd to Olema Rd	61.9	2	8	24	77
Olema Rd to Red Hill Ave	63.4	3	11	35	109
Redwood Avenue					
Corte Madera Ave to Tamalpais Dr	60.2	2	5	17	52
Tamalpais Drive					
Redwood Ave to U.S. 101	63.9	4	12	39	123
Tomales Petaluma Road					
SR 1 to Valley Ford Rd/Spring Hill Rd	63.3	3	11	34	107
2 <sup>nd</sup> Street					
4 <sup>th</sup> St to 3rd St	67.7	9	29	93	294
3rd St to Hetheron St	64.6	5	14	46	144
4 <sup>th</sup> Street					
Red Hill Ave to 2 <sup>nd</sup> St	70.5	18	56	177	561
I-580					
U.S. 101 to County Limit	76.8	76	239	757	2,393
SR-1					
North County Limit to Tomales Petaluma Rd	63.5	4	11	35	112
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	61.9	2	8	24	77
Pt Reyes Petaluma Rd to A St	56.3	1	2	7	21
A Street to Sir Francis Drake Blvd	59.6	1	5	14	46
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	60.4	2	5	17	55
Sir Francis Drake Blvd to County Limit	70.9	19	62	195	615
SR-37					
U.S. 101 to Atherton Ave	76.2	66	208	659	2,084
Atherton Ave to County Limit	73.9	39	123	388	1,227
SR-131					
U.S. 101 to Trestle Glen Blvd	69.3	13	43	135	426

Sheet 7: 2019 Project Traffic Percentatges

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue											
U.S. 101 to SR 37 (Sears Pt. Rd)	5,460	85.1%	14.9%	83.8%	13.6%	0.2%	2.4%	88.0%	9.1%	0.3%	2.5%
Butterfield Road											
Northern terminus to Sir Francis Drake Blvd	1,270	86.9%	13.1%	90.6%	6.8%	0.0%	2.6%	92.1%	5.2%	0.0%	2.6%
Center Boulevard											
Claus Drive to Sir Francis Drake Boulevard	15,783	81.0%	19.0%	88.7%	8.7%	0.0%	2.5%	89.4%	8.0%	0.1%	2.5%
College Avenue											
Sir Francis Drake Blvd to Estelle Ave	8,468	88.6%	11.4%	89.5%	7.9%	0.0%	2.6%	91.5%	5.8%	0.0%	2.6%
Corte Madera Avenue											
Bahr Lane to Redwood Ave	11,212	87.0%	13.0%	86.3%	11.1%	0.1%	2.5%	89.6%	7.8%	0.1%	2.6%
Las Galinas Avenue											
Miller Creek Rd to Lucas Valley Rd	7,651	88.8%	11.2%	84.0%	13.5%	0.2%	2.4%	88.3%	9.0%	0.2%	2.5%
Lucas Valley Rd to Freitas Pkwy	7,009	86.4%	13.6%	87.5%	9.8%	0.1%	2.5%	90.7%	6.6%	0.1%	2.6%
Freitas Pkwy to Northgate Dr	6,580	88.7%	11.3%	87.3%	10.1%	0.1%	2.5%	88.9%	8.5%	0.2%	2.5%
Lucas Valley Road											
Nicasio Valley Rd to Mt McKinley Rd	2,386	90.6%	9.4%	91.2%	6.0%	0.1%	2.6%	92.5%	4.8%	0.1%	2.6%
Mt McKinley Rd to Mt Muir Ct	3,576	88.0%	12.0%	90.5%	6.8%	0.1%	2.6%	92.2%	5.2%	0.0%	2.6%
Mt. Muir Court to Huckleberry Road	4,547	87.3%	12.7%	88.9%	8.5%	0.1%	2.5%	91.0%	6.4%	0.0%	2.6%
Huckleberry Rd to U.S. 101	5,929	87.1%	12.9%	86.6%	10.8%	0.1%	2.5%	89.0%	8.4%	0.1%	2.5%

Magnolia Avenue											
Estelle Ave to Doherty Dr	9,647	88.8%	11.2%	87.5%	10.0%	0.0%	2.5%	91.6%	5.8%	0.0%	2.6%
Doherty Dr to Bahr Ln	10,420	87.6%	12.4%	86.7%	10.7%	0.1%	2.5%	90.1%	7.2%	0.1%	2.6%
Miller Creek Road											
Lucas Valley Rd to Las Galinas Ave	923	88.0%	12.0%	86.0%	11.5%	0.0%	2.5%	89.6%	7.8%	0.1%	2.6%
Las Galinas Ave to U.S. 101	8,843	89.5%	10.5%	84.3%	13.1%	0.1%	2.4%	88.9%	8.4%	0.2%	2.5%
Nicasio Valley Road											
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,622	90.4%	9.6%	94.2%	3.0%	0.1%	2.7%	95.8%	1.4%	0.1%	2.7%
Lucas Valley Rd to Sir Francis Drake Blvd	1,212	86.5%	13.5%	96.2%	1.1%	0.0%	2.7%	96.7%	0.5%	0.0%	2.8%
North San Pedro Road											
U.S. 101 to Bucks Landing	7,881	86.3%	13.7%	88.5%	8.9%	0.1%	2.5%	91.0%	6.3%	0.1%	2.6%
Novato Boulevard											
Pt. Reyes Petaluma Rd to Indian Valley	5,267	88.4%	11.6%	92.1%	5.2%	0.1%	2.6%	92.9%	4.4%	0.1%	2.6%
Indian Valley to San Marin Dr	6,828	87.2%	12.8%	90.9%	6.5%	0.0%	2.6%	92.2%	5.1%	0.1%	2.6%
San Marin Dr to Simmons Lane	9,683	85.9%	14.1%	88.6%	8.8%	0.0%	2.5%	90.7%	6.7%	0.0%	2.6%
Simmons Lane to Diablo Ave	9,683	85.9%	14.1%	88.6%	8.8%	0.0%	2.5%	90.7%	6.7%	0.0%	2.6%
Diablo Ave to Rowland Blvd	4,558	87.9%	12.1%	86.2%	11.3%	0.1%	2.5%	88.5%	8.9%	0.1%	2.5%
Rowland Blvd to U.S. 101	4,558	87.9%	12.1%	86.2%	11.3%	0.1%	2.5%	88.5%	8.9%	0.1%	2.5%
Petaluma Point Reyes Road											
San Antonio Rd to Novato Blvd	2,886	88.6%	11.4%	87.2%	9.9%	0.4%	2.5%	88.0%	8.7%	0.7%	2.5%
Novato Blvd to Nicasio Valley Rd	4,261	89.0%	11.0%	90.9%	6.3%	0.2%	2.6%	92.0%	5.1%	0.3%	2.6%
Nicasio Valley Rd to Shoreline Hwy	4,151	90.0%	10.0%	91.9%	5.3%	0.2%	2.6%	92.8%	4.3%	0.2%	2.6%

Red Hill Avenue												
Sir Francis Drake Blvd to Ross Valley Dr	27,806	86.3%	13.7%	86.1%	11.4%	0.1%	2.5%	89.4%	8.0%	0.1%	2.5%	
San Marin Drive												
Novato Blvd to U.S. 101	5,311	86.9%	13.1%	86.8%	10.7%	0.1%	2.5%	88.6%	8.8%	0.1%	2.5%	
Sir Francis Drake Boulevard												
SR 1 to Platform Bridge Rd	4,187	89.6%	10.4%	93.4%	3.7%	0.2%	2.7%	94.6%	2.6%	0.2%	2.7%	
Platform Bridge Rd to Lagunitas Rd	3,908	87.6%	12.4%	93.6%	3.6%	0.1%	2.7%	95.0%	2.2%	0.1%	2.7%	
Lagunitas Rd to Nicasio Valley Rd	4,823	87.0%	13.0%	93.2%	4.0%	0.1%	2.7%	94.7%	2.5%	0.1%	2.7%	
Nicasio Valley Rd to Olema Rd	7,514	85.9%	14.1%	92.4%	4.9%	0.1%	2.6%	93.9%	3.4%	0.0%	2.7%	
Olema Rd to Red Hill Ave	13,981	88.2%	11.8%	87.4%	10.1%	0.0%	2.5%	91.8%	5.6%	0.0%	2.6%	
Redwood Avenue												
Corte Madera Ave to Tamalpais Dr	10,640	88.1%	11.9%	85.4%	12.0%	0.1%	2.4%	90.0%	7.3%	0.1%	2.6%	
Tamalpais Drive												
Redwood Ave to U.S. 101	12,998	87.8%	12.2%	85.1%	12.4%	0.1%	2.4%	89.3%	8.0%	0.1%	2.5%	
Tomales Petaluma Road												
SR 1 to Valley Ford Rd/Spring Hill Rd	2,394	84.6%	15.4%	86.8%	10.5%	0.2%	2.5%	90.2%	7.0%	0.2%	2.6%	
2 <sup>nd</sup> Street												
4 <sup>th</sup> St to 3rd St	23,119	88.1%	11.9%	84.3%	13.3%	0.1%	2.4%	89.0%	8.4%	0.1%	2.5%	
3rd St to Hetheron St	23,119	88.1%	11.9%	84.3%	13.3%	0.1%	2.4%	89.0%	8.4%	0.1%	2.5%	
4 <sup>th</sup> Street												
Red Hill Ave to 2 <sup>nd</sup> St	30,160	86.7%	13.3%	85.6%	11.9%	0.1%	2.4%	89.1%	8.3%	0.1%	2.5%	

U.S. 101											
County Limit to Atherton Ave	40,161	77.0%	23.0%	85.3%	11.6%	0.7%	2.4%	91.5%	5.1%	0.8%	2.6%
Atherton Ave to SR 37	50,873	78.8%	21.2%	86.1%	11.0%	0.5%	2.5%	91.5%	5.3%	0.6%	2.6%
SR 37 to Lucas Valley Rd/Smith Ranch Rd	84,596	81.3%	18.2%	86.9%	10.2%	0.4%	2.5%	93.9%	5.6%	0.5%	0.0%
Lucas Valley Rd/Smith Ranch Rd to I-580	89,291	81.4%	18.6%	87.6%	9.5%	0.3%	2.5%	91.9%	5.1%	0.4%	2.6%
I-580											
U.S. 101 to County Limit	36,746	78.7%	21.3%	83.6%	13.9%	0.1%	2.4%	91.6%	5.6%	0.2%	2.6%
SR-1											
North County Limit to Tomales Petaluma Rd	3,475	90.4%	9.6%	92.4%	4.6%	0.3%	2.6%	92.3%	4.7%	0.3%	2.6%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,578	91.0%	9.0%	95.1%	1.9%	0.3%	2.7%	95.1%	1.8%	0.4%	2.7%
Pt Reyes Petaluma Rd to A St	5,207	90.6%	9.4%	93.2%	3.9%	0.2%	2.7%	93.0%	4.0%	0.3%	2.7%
A Street to Sir Francis Drake Blvd	5,437	90.3%	9.7%	92.9%	4.2%	0.2%	2.6%	93.0%	4.1%	0.3%	2.7%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,746	90.8%	9.2%	93.5%	3.7%	0.2%	2.7%	94.4%	2.7%	0.2%	2.7%
Sir Francis Drake Blvd to County Limit	14,098	85.0%	15.0%	87.6%	9.7%	0.2%	2.5%	91.2%	6.0%	0.2%	2.6%
SR-37											
U.S. 101 to Atherton Ave	22,956	84.7%	15.3%	86.2%	10.6%	0.7%	2.5%	89.3%	7.2%	1.0%	2.5%
Atherton Ave to County Limit	24,101	84.7%	15.3%	85.9%	11.0%	0.7%	2.4%	89.1%	7.4%	1.0%	2.5%
SR-131											
U.S. 101 to Trestle Glen Blvd	13,673	86.5%	13.5%	82.8%	14.7%	0.1%	2.4%	85.9%	11.5%	0.1%	2.4%

Sheet 8: 2019 Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,460	3,896	632	9	111	714	74	3	20
Butterfield Road									
Northern terminus to Sir Francis Drake Blvd	1,270	1,000	75	0	29	154	9	0	4
Center Boulevard									
Claus Drive to Sir Francis Drake Boulevard	15,783	11,352	1,112	4	324	2,673	240	2	76
College Avenue									
Sir Francis Drake Blvd to Estelle Ave	8,468	6,715	595	2	191	882	56	0	25
Corte Madera Avenue									
Bahr Lane to Redwood Ave	11,212	8,424	1,087	5	240	1,304	114	1	37
Las Galinas Avenue									
Miller Creek Rd to Lucas Valley Rd	7,651	5,708	915	11	163	754	77	2	21
Lucas Valley Rd to Freitas Pkwy	7,009	5,301	596	8	151	865	63	1	25
Freitas Pkwy to Northgate Dr	6,580	5,091	590	7	145	663	63	1	19
Lucas Valley Road									
Nicasio Valley Rd to Mt McKinley Rd	2,386	1,972	131	2	56	208	11	0	6
Mt McKinley Rd to Mt Muir Ct	3,576	2,849	216	2	81	394	22	0	11
Mt. Muir Court to Huckleberry Road	4,547	3,529	336	3	101	527	37	0	15
Huckleberry Rd to U.S. 101	5,929	4,473	559	4	127	682	65	1	19
Magnolia Avenue									
Estelle Ave to Doherty Dr	9,647	7,495	857	4	214	987	62	0	28
Doherty Dr to Bahr Ln	10,420	7,920	980	5	226	1,161	93	1	33
Miller Creek Road									
Lucas Valley Rd to Las Galinas Ave	923	698	93	0	20	100	9	0	3
Las Galinas Ave to U.S. 101	8,843	6,677	1,041	10	190	823	78	2	23
Nicasio Valley Road									
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,622	2,234	70	2	64	241	3	0	7



Lucas Valley Rd to Sir Francis Drake Blvd	1,212	1,008	11	0	29	159	1	0	5
North San Pedro Road									
U.S. 101 to Bucks Landing	7,881	6,020	609	5	172	979	68	1	28
Novato Boulevard									
Pt. Reyes Petaluma Rd to Indian Valley	5,267	4,291	241	2	122	567	27	0	16
Indian Valley to San Marin Dr	6,828	5,408	386	3	154	808	45	1	23
San Marin Dr to Simmons Lane	9,683	7,372	732	2	210	1,240	91	1	35
Simmons Lane to Diablo Ave	9,683	7,372	732	2	210	1,240	91	1	35
Diablo Ave to Rowland Blvd	4,558	3,451	453	2	98	489	49	0	14
Rowland Blvd to U.S. 101	4,558	3,451	453	2	98	489	49	0	14
Petaluma Point Reyes Road									
San Antonio Rd to Novato Blvd	2,886	2,229	254	11	64	290	29	2	8
Novato Blvd to Nicasio Valley Rd	4,261	3,448	237	8	98	431	24	1	12
Nicasio Valley Rd to Shoreline Hwy	4,151	3,434	197	7	98	385	18	1	11
Red Hill Avenue									
Sir Francis Drake Blvd to Ross Valley Dr	27,806	20,672	2,735	13	589	3,393	304	3	97
San Marin Drive									
Novato Blvd to U.S. 101	5,311	4,006	493	3	114	616	61	1	18
Sir Francis Drake Boulevard									
SR 1 to Platform Bridge Rd	4,187	3,504	140	7	100	413	11	1	12
Platform Bridge Rd to Lagunitas Rd	3,908	3,206	123	4	91	460	11	0	13
Lagunitas Rd to Nicasio Valley Rd	4,823	3,913	168	4	112	594	16	0	17
Nicasio Valley Rd to Olema Rd	7,514	5,966	318	4	170	992	35	0	28
Olema Rd to Red Hill Ave	13,981	10,781	1,240	6	307	1,511	92	1	43
Redwood Avenue									
Corte Madera Ave to Tamalpais Dr	10,640	8,009	1,129	7	228	1,140	92	1	32
Tamalpais Drive									
Redwood Ave to U.S. 101	12,998	9,703	1,418	9	277	1,421	128	2	41
Tomales Petaluma Road									
SR 1 to Valley Ford Rd/Spring Hill Rd	2,394	1,759	213	3	50	332	26	1	9
2 <sup>nd</sup> Street									
4 <sup>th</sup> St to 3rd St	23,119	17,165	2,703	14	489	2,444	232	2	70
3rd St to Hetherton St	23,119	17,165	2,703	14	489	2,444	232	2	70

4 <sup>th</sup> Street									
Red Hill Ave to 2 <sup>nd</sup> St	30,160	22,389	3,104	15	638	3,575	332	4	102
U.S. 101									
County Limit to Atherton Ave	40,161	26,360	3,578	229	751	8,454	475	72	241
Atherton Ave to SR 37	50,873	34,506	4,406	200	984	9,866	568	62	281
SR 37 to Lucas Valley Rd/Smith Ranch Rd	84,596	59,781	7,027	281	1,704	14,445	864	81	0
Lucas Valley Rd/Smith Ranch Rd to I-580	89,291	63,697	6,940	224	1,816	15,265	852	63	435
I-580									
U.S. 101 to County Limit	36,746	24,161	4,020	42	689	7,176	442	13	205
SR-1									
North County Limit to Tomales Petaluma Rd	3,475	2,905	145	9	83	307	16	1	9
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,578	2,231	44	8	64	220	4	1	6
Pt Reyes Petaluma Rd to A St	5,207	4,399	183	11	125	454	20	2	13
A Street to Sir Francis Drake Blvd	5,437	4,562	206	10	130	491	22	2	14
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,746	4,026	158	9	115	413	12	1	12
Sir Francis Drake Blvd to County Limit	14,098	10,502	1,159	23	299	1,928	126	5	55
SR-37									
U.S. 101 to Atherton Ave	22,956	16,760	2,065	136	478	3,139	255	34	89
Atherton Ave to County Limit	24,101	17,526	2,238	142	500	3,291	275	36	94
SR-131									
U.S. 101 to Trestle Glen Blvd	13,673	9,791	1,742	10	279	1,591	213	3	45

## Sheet 9: 2040 No Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
Atherton Avenue					
U.S. 101 to SR 37 (Sears Pt. Rd)	63.5	4	11	35	112
Butterfield Road					
Northern terminus to Sir Francis Drake Blvd	52.7	0	1	3	9
Center Boulevard					
Claus Drive to Sir Francis Drake Boulevard	65.0	5	16	50	158
College Avenue					
Sir Francis Drake Blvd to Estelle Ave	59.5	1	4	14	45
Corte Madera Avenue					
Bahr Lane to Redwood Ave	60.7	2	6	19	59
Las Galinas Avenue					
Miller Creek Rd to Lucas Valley Rd	58.9	1	4	12	39
Lucas Valley Rd to Freitas Pkwy	59.3	1	4	13	43
Freitas Pkwy to Northgate Dr	56.3	1	2	7	21
Lucas Valley Road					
Nicasio Valley Rd to Mt McKinley Rd	58.9	1	4	12	39
Mt McKinley Rd to Mt Muir Ct	63.3	3	11	34	107
Mt. Muir Court to Huckleberry Road	64.8	5	15	48	151
Huckleberry Rd to U.S. 101	63.4	3	11	35	109
Magnolia Avenue					
Estelle Ave to Doherty Dr	60.3	2	5	17	54
Doherty Dr to Bahr Ln	61.5	2	7	22	71
Miller Creek Road					
Lucas Valley Rd to Las Galinas Ave	53.3	0	1	3	11
Las Galinas Ave to U.S. 101	58.8	1	4	12	38
Nicasio Valley Road					
Pt Reyes Petaluma Rd to Lucas Valley Rd	64.8	5	15	48	151
Lucas Valley Rd to Sir Francis Drake Blvd	56.8	1	2	8	24
North San Pedro Road					
U.S. 101 to Bucks Landing	59.2	1	4	13	42
Novato Boulevard					
Pt. Reyes Petaluma Rd to Indian Valley	65.0	5	16	50	158
Indian Valley to San Marin Dr	64.4	4	14	44	138
San Marin Dr to Simmons Lane	63.6	4	11	36	115
Simmons Lane to Diablo Ave	66.0	6	20	63	199
Diablo Ave to Rowland Blvd	61.3	2	7	21	67
Rowland Blvd to U.S. 101	61.3	2	7	21	67
Petaluma Point Reyes Road					
San Antonio Rd to Novato Blvd	65.0	5	16	50	158
Novato Blvd to Nicasio Valley Rd	64.9	5	15	49	155
Nicasio Valley Rd to Shoreline Hwy	63.3	3	11	34	107
Red Hill Avenue					
Sir Francis Drake Blvd to Ross Valley Dr	69.1	13	41	129	406

San Marin Drive					
Novato Blvd to U.S. 101	61.7	2	7	23	74
Sir Francis Drake Boulevard					
SR 1 to Platform Bridge Rd	64.2	4	13	42	132
Platform Bridge Rd to Lagunitas Rd	60.2	2	5	17	52
Lagunitas Rd to Nicasio Valley Rd	59.5	1	4	14	45
Nicasio Valley Rd to Olema Rd	61.8	2	8	24	76
Olema Rd to Red Hill Ave	63.5	4	11	35	112
Redwood Avenue					
Corte Madera Ave to Tamalpais Dr	60.2	2	5	17	52
Tamalpais Drive					
Redwood Ave to U.S. 101	60.2	2	5	17	52
Tomales Petaluma Road					
SR 1 to Valley Ford Rd/Spring Hill Rd	64.0	4	13	40	126
2 <sup>nd</sup> Street					
4 <sup>th</sup> St to 3rd St	68.6	11	36	115	362
3rd St to Hetherton St	65.3	5	17	54	169
4 <sup>th</sup> Street					
Red Hill Ave to 2 <sup>nd</sup> St	70.6	18	57	182	574
U.S. 101					
County Limit to SR 37	80.0	158	500	1,581	5,000
SR 37 to I-580	81.4	218	690	2,183	6,902
I-580 to County Limit	80.7	186	587	1,858	5,874
I-580					
U.S. 101 to County Limit	80.1	162	512	1,618	5,116
SR-1					
North County Limit to Tomales Petaluma Rd	64.4	4	14	44	138
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	64.3	4	13	43	135
Pt Reyes Petaluma Rd to A St	56.9	1	2	8	24
A Street to Sir Francis Drake Blvd	60.2	2	5	17	52
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	60.6	2	6	18	57
Sir Francis Drake Blvd to County Limit	70.9	19	62	195	615
SR-37					
U.S. 101 to Atherton Ave	78.0	100	315	998	3,155
Atherton Ave to County Limit	75.8	60	190	601	1,901
SR-131					
U.S. 101 to Trestle Glen Blvd	73.6	36	115	362	1,145
SMART Rail Corridor					
Commuter Corridor	69.0	13	40	126	397
Brazos Branch Line	68.0	10	32	100	315

## Sheet 10: 2040 No Project Traffic Percentages

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue											
U.S. 101 to SR 37 (Sears Pt. Rd)	5,321	85.9%	14.1%	82.9%	14.5%	0.3%	2.4%	86.40%	10.59%	0.55%	2.46%
Butterfield Road											
Northern terminus to Sir Francis Drake Blvd	1,137	86.0%	14.0%	88.9%	8.5%	0.0%	2.5%	91.21%	6.18%	0.01%	2.60%
Center Boulevard											
Claus Drive to Sir Francis Drake Boulevard	16,170	81.6%	18.4%	88.6%	8.8%	0.0%	2.5%	88.74%	8.64%	0.09%	2.53%
College Avenue											
Sir Francis Drake Blvd to Estelle Ave	8,412	88.0%	12.0%	88.9%	8.6%	0.0%	2.5%	90.75%	6.62%	0.04%	2.59%
Corte Madera Avenue											
Bahr Lane to Redwood Ave	11,211	87.2%	12.8%	85.8%	11.7%	0.0%	2.4%	89.16%	8.23%	0.07%	2.54%
Las Galinas Avenue											
Miller Creek Rd to Lucas Valley Rd	5,399	87.7%	12.3%	86.5%	10.7%	0.2%	2.5%	88.45%	8.71%	0.32%	2.52%
Lucas Valley Rd to Freitas Pkwy	7,421	87.5%	12.5%	89.4%	7.8%	0.2%	2.5%	90.94%	6.32%	0.15%	2.59%
Freitas Pkwy to Northgate Dr	3,831	88.1%	11.9%	88.5%	8.8%	0.1%	2.5%	89.93%	7.33%	0.18%	2.56%
Lucas Valley Road											
Nicasio Valley Rd to Mt McKinley Rd	4,288	89.4%	10.6%	94.0%	3.1%	0.2%	2.7%	93.88%	3.11%	0.33%	2.68%
Mt McKinley Rd to Mt Muir Ct	5,590	88.2%	11.8%	92.4%	4.7%	0.2%	2.6%	92.68%	4.44%	0.23%	2.64%
Mt. Muir Court to Huckleberry Road	6,546	87.9%	12.1%	91.1%	6.1%	0.2%	2.6%	91.68%	5.52%	0.19%	2.61%
Huckleberry Rd to U.S. 101	5,692	88.2%	11.8%	89.0%	8.3%	0.2%	2.5%	89.63%	7.60%	0.21%	2.55%

Magnolia Avenue											
Estelle Ave to Doherty Dr	9,886	88.7%	11.3%	87.6%	9.8%	0.0%	2.5%	90.87%	6.48%	0.05%	2.59%
Doherty Dr to Bahr Ln	10,429	87.9%	12.1%	85.6%	11.9%	0.0%	2.4%	89.29%	8.09%	0.07%	2.55%
Miller Creek Road											
Lucas Valley Rd to Las Galinas Ave	1,649	87.0%	13.0%	87.4%	10.0%	0.1%	2.5%	89.92%	7.44%	0.08%	2.56%
Las Galinas Ave to U.S. 101	6,586	86.8%	13.2%	86.5%	10.8%	0.2%	2.5%	89.28%	7.99%	0.19%	2.54%
Nicasio Valley Road											
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,716	89.1%	10.9%	94.7%	2.4%	0.2%	2.7%	94.69%	2.33%	0.28%	2.70%
Lucas Valley Rd to Sir Francis Drake Blvd	1,189	87.4%	12.6%	96.5%	0.8%	0.0%	2.7%	96.76%	0.47%	0.00%	2.76%
North San Pedro Road											
U.S. 101 to Bucks Landing	7,790	87.2%	12.8%	89.2%	8.2%	0.1%	2.5%	91.31%	5.97%	0.11%	2.60%
Novato Boulevard											
Pt. Reyes Petaluma Rd to Indian Valley	6,123	87.9%	12.1%	92.0%	5.3%	0.1%	2.6%	92.54%	4.70%	0.12%	2.64%
Indian Valley to San Marin Dr	7,146	87.2%	12.8%	90.8%	6.5%	0.1%	2.6%	91.77%	5.52%	0.10%	2.62%
San Marin Dr to Simmons Lane	10,176	86.2%	13.8%	88.9%	8.5%	0.1%	2.5%	90.41%	6.95%	0.06%	2.58%
Simmons Lane to Diablo Ave	10,176	86.2%	13.8%	88.9%	8.5%	0.1%	2.5%	90.41%	6.95%	0.06%	2.58%
Diablo Ave to Rowland Blvd	5,595	88.6%	11.4%	86.1%	11.3%	0.1%	2.5%	88.14%	9.24%	0.11%	2.51%
Rowland Blvd to U.S. 101	5,595	88.6%	11.4%	86.1%	11.3%	0.1%	2.5%	88.14%	9.24%	0.11%	2.51%
Petaluma Point Reyes Road											
San Antonio Rd to Novato Blvd	4,868	88.2%	11.8%	90.3%	6.7%	0.4%	2.6%	90.54%	6.17%	0.71%	2.58%
Novato Blvd to Nicasio Valley Rd	5,833	88.0%	12.0%	92.3%	4.7%	0.3%	2.6%	92.31%	4.61%	0.45%	2.63%
Nicasio Valley Rd to Shoreline Hwy	4,224	85.5%	14.5%	92.2%	4.9%	0.3%	2.6%	93.31%	3.66%	0.37%	2.66%

Red Hill Avenue											
Sir Francis Drake Blvd to Ross Valley Dr	27,369	86.0%	14.0%	86.1%	11.4%	0.1%	2.5%	88.68%	8.67%	0.12%	2.53%
San Marin Drive											
Novato Blvd to U.S. 101	4,602	86.9%	13.1%	83.1%	14.4%	0.1%	2.4%	85.64%	11.72%	0.19%	2.44%
Sir Francis Drake Boulevard											
SR 1 to Platform Bridge Rd	4,043	87.6%	12.4%	94.0%	3.1%	0.2%	2.7%	94.51%	2.59%	0.21%	2.69%
Platform Bridge Rd to Lagunitas Rd	4,043	87.6%	12.4%	94.0%	3.1%	0.2%	2.7%	94.51%	2.59%	0.21%	2.69%
Lagunitas Rd to Nicasio Valley Rd	5,095	86.9%	13.1%	93.4%	3.9%	0.1%	2.7%	94.24%	2.97%	0.10%	2.69%
Nicasio Valley Rd to Olema Rd	7,270	86.3%	13.7%	92.4%	4.9%	0.1%	2.6%	93.50%	3.77%	0.06%	2.67%
Olema Rd to Red Hill Ave	14,466	88.5%	11.5%	87.2%	10.2%	0.1%	2.5%	91.29%	6.04%	0.06%	2.60%
Redwood Avenue											
Corte Madera Ave to Tamalpais Dr	10,587	88.2%	11.8%	85.6%	11.9%	0.1%	2.4%	89.73%	7.62%	0.09%	2.56%
Tamalpais Drive											
Redwood Ave to U.S. 101	12,611	88.4%	11.6%	86.0%	11.5%	0.1%	2.5%	89.03%	8.32%	0.11%	2.54%
Tomales Petaluma Road											
SR 1 to Valley Ford Rd/Spring Hill Rd	2,882	85.6%	14.4%	87.1%	10.2%	0.2%	2.5%	89.95%	7.23%	0.26%	2.56%
2 <sup>nd</sup> Street											
4 <sup>th</sup> St to 3rd St	25,193	86.3%	13.7%	85.5%	12.0%	0.1%	2.4%	88.22%	9.12%	0.14%	2.51%
3rd St to Hetherton St	25,193	86.3%	13.7%	85.5%	12.0%	0.1%	2.4%	88.22%	9.12%	0.14%	2.51%
4 <sup>th</sup> Street											
Red Hill Ave to 2 <sup>nd</sup> St	29,400	86.0%	14.0%	85.4%	12.1%	0.1%	2.4%	88.35%	9.00%	0.13%	2.52%
U.S. 101											
County Limit to SR 37	116,864	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	194,067	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	152,475	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%

I-580											
U.S. 101 to County Limit	83,410	78.5%	21.5%	88.8%	8.6%	0.1%	2.5%	93.71%	3.47%	0.15%	2.67%
SR-1											
North County Limit to Tomales Petaluma Rd	4,032	88.2%	11.8%	92.7%	4.4%	0.3%	2.6%	93.78%	3.25%	0.30%	2.67%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	3,970	88.0%	12.0%	95.5%	1.5%	0.3%	2.7%	95.73%	1.27%	0.28%	2.73%
Pt Reyes Petaluma Rd to A St	5,465	86.7%	13.3%	93.8%	3.3%	0.2%	2.7%	94.09%	2.92%	0.31%	2.68%
A Street to Sir Francis Drake Blvd	5,585	86.7%	13.3%	93.6%	3.5%	0.2%	2.7%	94.02%	3.00%	0.29%	2.68%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,439	87.7%	12.3%	94.5%	2.6%	0.2%	2.7%	94.76%	2.29%	0.24%	2.70%
Sir Francis Drake Blvd to County Limit	15,154	83.7%	16.3%	93.3%	3.9%	0.1%	2.7%	95.00%	2.15%	0.14%	2.71%
SR-37											
U.S. 101 to Atherton Ave	38,579	85.4%	14.6%	90.5%	6.5%	0.5%	2.6%	91.76%	4.89%	0.73%	2.62%
Atherton Ave to County Limit	41,306	85.1%	14.9%	90.2%	6.8%	0.5%	2.6%	91.72%	4.93%	0.74%	2.61%
SR-131											
U.S. 101 to Trestle Glen Blvd	35,956	86.3%	13.7%	82.9%	14.6%	0.1%	2.4%	85.99%	11.37%	0.19%	2.45%



## Sheet 11: 2040 No Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,321	3,787	661	13	108	650	80	4	19
Butterfield Road									
Northern terminus to Sir Francis Drake Blvd	1,137	869	83	0	25	145	10	0	4
Center Boulevard									
Claus Drive to Sir Francis Drake Boulevard	16,170	11,696	1,158	6	333	2,641	257	3	75
College Avenue									
Sir Francis Drake Blvd to Estelle Ave	8,412	6,575	635	2	187	918	67	0	26
Corte Madera Avenue									
Bahr Lane to Redwood Ave	11,211	8,386	1,145	4	239	1,281	118	1	37
Las Galinas Avenue									
Miller Creek Rd to Lucas Valley Rd	5,399	4,099	509	11	117	586	58	2	17
Lucas Valley Rd to Freitas Pkwy	7,421	5,810	510	11	166	841	58	1	24
Freitas Pkwy to Northgate Dr	3,831	2,990	297	5	85	408	33	1	12
Lucas Valley Road									
Nicasio Valley Rd to Mt McKinley Rd	4,288	3,602	119	9	103	427	14	2	12
Mt McKinley Rd to Mt Muir Ct	5,590	4,556	233	10	130	614	29	2	17
Mt. Muir Court to Huckleberry Road	6,546	5,245	353	10	150	723	44	2	21
Huckleberry Rd to U.S. 101	5,692	4,469	418	8	127	600	51	1	17
Magnolia Avenue									
Estelle Ave to Doherty Dr	9,886	7,681	861	3	219	1,019	73	1	29
Doherty Dr to Bahr Ln	10,429	7,850	1,090	4	224	1,127	102	1	32
Miller Creek Road									
Lucas Valley Rd to Las Galinas Ave	1,649	1,254	144	1	36	193	16	0	6
Las Galinas Ave to U.S. 101	6,586	4,949	620	9	141	775	69	2	22

Nicasio Valley Road									
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,716	3,980	99	9	113	488	12	1	14
Lucas Valley Rd to Sir Francis Drake Blvd	1,189	1,002	8	0	29	145	1	0	4
North San Pedro Road									
U.S. 101 to Bucks Landing	7,790	6,060	556	6	173	909	59	1	26
Novato Boulevard									
Pt. Reyes Petaluma Rd to Indian Valley	6,123	4,949	284	7	141	686	35	1	20
Indian Valley to San Marin Dr	7,146	5,657	405	7	161	840	50	1	24
San Marin Dr to Simmons Lane	10,176	7,795	748	5	222	1,271	98	1	36
Simmons Lane to Diablo Ave	10,176	7,795	748	5	222	1,271	98	1	36
Diablo Ave to Rowland Blvd	5,595	4,269	561	4	122	563	59	1	16
Rowland Blvd to U.S. 101	5,595	4,269	561	4	122	563	59	1	16
Petaluma Point Reyes Road									
San Antonio Rd to Novato Blvd	4,868	3,879	287	19	111	519	35	4	15
Novato Blvd to Nicasio Valley Rd	5,833	4,739	242	16	135	647	32	3	18
Nicasio Valley Rd to Shoreline Hwy	4,224	3,331	176	10	95	571	22	2	16
Red Hill Avenue									
Sir Francis Drake Blvd to Ross Valley Dr	27,369	20,265	2,682	18	578	3,394	332	5	97
San Marin Drive									
Novato Blvd to U.S. 101	4,602	3,326	575	6	95	515	70	1	15
Sir Francis Drake Boulevard									
SR 1 to Platform Bridge Rd	4,043	3,329	111	6	95	474	13	1	14
Platform Bridge Rd to Lagunitas Rd	4,043	3,329	111	6	95	474	13	1	14
Lagunitas Rd to Nicasio Valley Rd	5,095	4,133	170	4	118	631	20	1	18
Nicasio Valley Rd to Olema Rd	7,270	5,796	307	4	165	933	38	1	27
Olema Rd to Red Hill Ave	14,466	11,172	1,308	7	318	1,517	100	1	43
Redwood Avenue									
Corte Madera Ave to Tamalpais Dr	10,587	7,989	1,112	7	228	1,123	95	1	32
Tamalpais Drive									
Redwood Ave to U.S. 101	12,611	9,585	1,278	9	273	1,304	122	2	37
Tomales Petaluma Road									

SR 1 to Valley Ford Rd/Spring Hill Rd	2,882	2,150	252	5	61	372	30	1	11
2 <sup>nd</sup> Street									
4 <sup>th</sup> St to 3rd St	25,193	18,584	2,601	21	530	3,050	315	5	87
3rd St to Hetherton St	25,193	18,584	2,601	21	530	3,050	315	5	87
4 <sup>th</sup> Street									
Red Hill Ave to 2 <sup>nd</sup> St	29,400	21,601	3,059	20	616	3,627	370	5	103
U.S. 101									
County Limit to SR 37	116,864	78,612	10,573	589	2,245	22,634	1,384	181	646
SR 37 to I-580	194,067	136,957	17,318	699	3,909	32,792	2,188	204	0
I-580 to County Limit	152,475	108,642	12,948	425	3,103	24,925	1,615	118	712
I-580									
U.S. 101 to County Limit	83,410	58,108	5,596	92	1,656	16,829	623	27	479
SR-1									
North County Limit to Tomales Petaluma Rd	4,032	3,296	157	10	94	445	15	1	13
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	3,970	3,336	53	9	95	456	6	1	13
Pt Reyes Petaluma Rd to A St	5,465	4,443	158	11	127	683	21	2	19
A Street to Sir Francis Drake Blvd	5,585	4,533	171	10	129	697	22	2	20
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,439	3,677	102	8	105	518	13	1	15
Sir Francis Drake Blvd to County Limit	15,154	11,837	495	16	337	2,345	53	3	67
SR-37									
U.S. 101 to Atherton Ave	38,579	29,807	2,142	155	850	5,161	275	41	147
Atherton Ave to County Limit	41,306	31,707	2,390	176	903	5,641	303	46	161
SR-131									
U.S. 101 to Trestle Glen Blvd	35,956	25,712	4,528	31	744	4,248	562	9	121

## Sheet 12: 2040 Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
Atherton Avenue					
U.S. 101 to SR 37 (Sears Pt. Rd)	64.0	4	13	40	126
Butterfield Road					
Northern terminus to Sir Francis Drake Blvd	52.9	0	1	3	10
Center Boulevard					
Claus Drive to Sir Francis Drake Boulevard	65.2	5	17	52	166
College Avenue					
Sir Francis Drake Blvd to Estelle Ave	59.6	1	5	14	46
Corte Madera Avenue					
Bahr Lane to Redwood Ave	60.6	2	6	18	57
Las Galinas Avenue					
Miller Creek Rd to Lucas Valley Rd	58.3	1	3	11	34
Lucas Valley Rd to Freitas Pkwy	59.5	1	4	14	45
Freitas Pkwy to Northgate Dr	59.1	1	4	13	41
Lucas Valley Road					
Nicasio Valley Rd to Mt McKinley Rd	58.7	1	4	12	37
Mt McKinley Rd to Mt Muir Ct	63.2	3	10	33	104
Mt. Muir Court to Huckleberry Road	64.8	5	15	48	151
Huckleberry Rd to U.S. 101	64.3	4	13	43	135
Magnolia Avenue					
Estelle Ave to Doherty Dr	60.2	2	5	17	52
Doherty Dr to Bahr Ln	61.5	2	7	22	71
Miller Creek Road					
Lucas Valley Rd to Las Galinas Ave	54.7	0	1	5	15
Las Galinas Ave to U.S. 101	59.1	1	4	13	41
Nicasio Valley Road					
Pt Reyes Petaluma Rd to Lucas Valley Rd	64.9	5	15	49	155
Lucas Valley Rd to Sir Francis Drake Blvd	57.3	1	3	8	27
North San Pedro Road					
U.S. 101 to Bucks Landing	57.3	1	3	8	27
Novato Boulevard					
Pt. Reyes Petaluma Rd to Indian Valley	65.8	6	19	60	190
Indian Valley to San Marin Dr	65.2	5	17	52	166
San Marin Dr to Simmons Lane	64.1	4	13	41	129
Simmons Lane to Diablo Ave	66.5	7	22	71	223
Diablo Ave to Rowland Blvd	61.7	2	7	23	74
Rowland Blvd to U.S. 101	61.6	2	7	23	72
Petaluma Point Reyes Road					
San Antonio Rd to Novato Blvd	65.2	5	17	52	166
Novato Blvd to Nicasio Valley Rd	65.0	5	16	50	158
Nicasio Valley Rd to Shoreline Hwy	64.1	4	13	41	129
Red Hill Avenue					
Sir Francis Drake Blvd to Ross Valley Dr	69.3	13	43	135	426

San Marin Drive					
Novato Blvd to U.S. 101	62.2	3	8	26	83
Sir Francis Drake Boulevard					
SR 1 to Platform Bridge Rd	65.5	6	18	56	177
Platform Bridge Rd to Lagunitas Rd	61.5	2	7	22	71
Lagunitas Rd to Nicasio Valley Rd	60.8	2	6	19	60
Nicasio Valley Rd to Olema Rd	62.9	3	10	31	97
Olema Rd to Red Hill Ave	63.9	4	12	39	123
Redwood Avenue					
Corte Madera Ave to Tamalpais Dr	60.1	2	5	16	51
Tamalpais Drive					
Redwood Ave to U.S. 101	63.9	4	12	39	123
Tomales Petaluma Road					
SR 1 to Valley Ford Rd/Spring Hill Rd	64.3	4	13	43	135
2 <sup>nd</sup> Street					
4 <sup>th</sup> St to 3rd St	68.8	12	38	120	379
3rd St to Hetherton St	65.5	6	18	56	177
4 <sup>th</sup> Street					
Red Hill Ave to 2 <sup>nd</sup> St	70.7	19	59	186	587
U.S. 101					
County Limit to SR 37	80.3	169	536	1,694	5,358
SR 37 to I-580	81.4	218	690	2,183	6,902
I-580 to County Limit	80.9	195	615	1,945	6,151
I-580					
U.S. 101 to County Limit	80.4	173	548	1,734	5,482
SR-1					
North County Limit to Tomales Petaluma Rd	64.9	5	15	49	155
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	64.6	5	14	46	144
Pt Reyes Petaluma Rd to A St	57.1	1	3	8	26
A Street to Sir Francis Drake Blvd	60.7	2	6	19	59
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	61.6	2	7	23	72
Sir Francis Drake Blvd to County Limit	71.0	20	63	199	629
SR-37					
U.S. 101 to Atherton Ave	78.3	107	338	1,069	3,380
Atherton Ave to County Limit	76.1	64	204	644	2,037
SR-131					
U.S. 101 to Trestle Glen Blvd	73.7	37	117	371	1,172

## Sheet 13: 2040 Project Traffic Percentages

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue											
U.S. 101 to SR 37 (Sears Pt. Rd)	5,765	84.9%	15.1%	82.2%	15.2%	0.3%	2.3%	86.65%	10.39%	0.48%	2.47%
Butterfield Road											
Northern terminus to Sir Francis Drake Blvd	1,202	86.0%	14.0%	89.2%	8.2%	0.0%	2.5%	91.42%	5.96%	0.01%	2.61%
Center Boulevard											
Claus Drive to Sir Francis Drake Boulevard	16,827	80.1%	19.9%	89.8%	7.6%	0.0%	2.6%	89.62%	7.75%	0.08%	2.55%
College Avenue											
Sir Francis Drake Blvd to Estelle Ave	8,992	87.6%	12.4%	89.4%	8.0%	0.0%	2.5%	91.63%	5.73%	0.03%	2.61%
Corte Madera Avenue											
Bahr Lane to Redwood Ave	11,449	87.2%	12.8%	86.5%	11.0%	0.0%	2.5%	89.68%	7.69%	0.07%	2.56%
Las Galinas Avenue											
Miller Creek Rd to Lucas Valley Rd	4,992	89.3%	10.7%	85.7%	11.7%	0.2%	2.4%	88.85%	8.28%	0.33%	2.53%
Lucas Valley Rd to Freitas Pkwy	7,683	87.5%	12.5%	88.5%	8.8%	0.1%	2.5%	91.42%	5.84%	0.13%	2.61%
Freitas Pkwy to Northgate Dr	7,615	88.6%	11.4%	88.3%	9.1%	0.1%	2.5%	90.40%	6.86%	0.17%	2.58%
Lucas Valley Road											
Nicasio Valley Rd to Mt McKinley Rd	4,210	88.8%	11.2%	94.6%	2.5%	0.2%	2.7%	94.58%	2.49%	0.24%	2.70%
Mt McKinley Rd to Mt Muir Ct	5,563	88.3%	11.7%	92.9%	4.3%	0.1%	2.6%	93.25%	3.92%	0.17%	2.66%
Mt. Muir Court to Huckleberry Road	6,724	88.0%	12.0%	91.4%	5.8%	0.1%	2.6%	92.06%	5.17%	0.14%	2.62%
Huckleberry Rd to U.S. 101	7,113	88.3%	11.7%	88.9%	8.5%	0.1%	2.5%	89.57%	7.73%	0.14%	2.55%

Magnolia Avenue											
Estelle Ave to Doherty Dr	10,136	88.5%	11.5%	88.0%	9.5%	0.0%	2.5%	91.75%	5.60%	0.04%	2.62%
Doherty Dr to Bahr Ln	10,818	87.8%	12.2%	86.4%	11.1%	0.0%	2.5%	90.19%	7.17%	0.07%	2.57%
Miller Creek Road											
Lucas Valley Rd to Las Galinas Ave	2,460	86.3%	13.7%	88.9%	8.5%	0.1%	2.5%	91.72%	5.58%	0.09%	2.61%
Las Galinas Ave to U.S. 101	7,979	88.4%	11.6%	86.0%	11.4%	0.1%	2.5%	89.69%	7.57%	0.18%	2.56%
Nicasio Valley Road											
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,779	88.4%	11.6%	95.3%	1.8%	0.2%	2.7%	95.24%	1.85%	0.20%	2.71%
Lucas Valley Rd to Sir Francis Drake Blvd	1,322	87.1%	12.9%	96.3%	1.0%	0.0%	2.7%	96.66%	0.58%	0.00%	2.76%
North San Pedro Road											
U.S. 101 to Bucks Landing	8,316	87.6%	12.4%	88.6%	8.8%	0.1%	2.5%	90.98%	6.31%	0.11%	2.59%
Novato Boulevard											
Pt. Reyes Petaluma Rd to Indian Valley	6,870	85.8%	14.2%	92.2%	5.1%	0.1%	2.6%	93.51%	3.73%	0.09%	2.67%
Indian Valley to San Marin Dr	8,209	85.9%	14.1%	90.9%	6.4%	0.1%	2.6%	92.61%	4.67%	0.08%	2.64%
San Marin Dr to Simmons Lane	11,411	85.4%	14.6%	89.7%	7.7%	0.0%	2.6%	91.30%	6.04%	0.05%	2.60%
Simmons Lane to Diablo Ave	11,411	85.4%	14.6%	89.7%	7.7%	0.0%	2.6%	91.30%	6.04%	0.05%	2.60%
Diablo Ave to Rowland Blvd	6,045	87.4%	12.6%	86.7%	10.8%	0.1%	2.5%	89.54%	7.82%	0.09%	2.55%
Rowland Blvd to U.S. 101	6,045	87.4%	12.6%	86.7%	10.8%	0.1%	2.5%	89.54%	7.82%	0.09%	2.55%
Petaluma Point Reyes Road											
San Antonio Rd to Novato Blvd	4,888	87.5%	12.5%	90.1%	6.9%	0.4%	2.6%	90.47%	6.37%	0.59%	2.58%
Novato Blvd to Nicasio Valley Rd	6,002	87.4%	12.6%	92.6%	4.5%	0.3%	2.6%	92.95%	4.05%	0.35%	2.65%
Nicasio Valley Rd to Shoreline Hwy	5,651	87.3%	12.7%	93.7%	3.4%	0.2%	2.7%	94.15%	2.90%	0.27%	2.68%

Red Hill Avenue											
Sir Francis Drake Blvd to Ross Valley Dr	28,310	85.8%	14.2%	86.1%	11.4%	0.1%	2.5%	89.02%	8.34%	0.11%	2.54%
San Marin Drive											
Novato Blvd to U.S. 101	5,143	85.4%	14.6%	84.1%	13.4%	0.1%	2.4%	87.73%	9.61%	0.16%	2.50%
Sir Francis Drake Boulevard											
SR 1 to Platform Bridge Rd	4,896	84.3%	15.7%	94.5%	2.6%	0.1%	2.7%	95.47%	1.68%	0.13%	2.72%
Platform Bridge Rd to Lagunitas Rd	4,737	82.7%	17.3%	94.3%	2.9%	0.1%	2.7%	95.67%	1.55%	0.05%	2.73%
Lagunitas Rd to Nicasio Valley Rd	6,101	82.8%	17.2%	93.9%	3.3%	0.1%	2.7%	95.38%	1.85%	0.05%	2.72%
Nicasio Valley Rd to Olema Rd	8,855	83.4%	16.6%	92.9%	4.4%	0.0%	2.6%	94.58%	2.69%	0.03%	2.70%
Olema Rd to Red Hill Ave	15,605	87.9%	12.1%	87.2%	10.2%	0.0%	2.5%	91.83%	5.50%	0.04%	2.62%
Redwood Avenue											
Corte Madera Ave to Tamalpais Dr	10,720	88.6%	11.4%	85.5%	12.0%	0.1%	2.4%	89.85%	7.50%	0.09%	2.56%
Tamalpais Drive											
Redwood Ave to U.S. 101	13,205	88.2%	11.8%	85.6%	11.8%	0.1%	2.4%	89.42%	7.93%	0.11%	2.55%
Tomales Petaluma Road											
SR 1 to Valley Ford Rd/Spring Hill Rd	3,251	85.8%	14.2%	88.5%	8.8%	0.2%	2.5%	90.72%	6.46%	0.24%	2.59%
2 <sup>nd</sup> Street											
4 <sup>th</sup> St to 3rd St	26,132	85.8%	14.2%	85.5%	12.0%	0.1%	2.4%	88.60%	8.75%	0.13%	2.53%
3rd St to Hetherton St	26,132	85.8%	14.2%	85.5%	12.0%	0.1%	2.4%	88.60%	8.75%	0.13%	2.53%
4 <sup>th</sup> Street											
Red Hill Ave to 2 <sup>nd</sup> St	30,222	85.7%	14.3%	85.5%	11.9%	0.1%	2.4%	88.72%	8.65%	0.11%	2.53%
U.S. 101											
County Limit to SR 37	119,820	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	204,227	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	161,124	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%



I-580											
U.S. 101 to County Limit	88,876	78.85%	21.15%	87.81%	9.56%	0.13%	2.50%	93.10%	4.11%	0.14%	2.65%
SR-1											
North County Limit to Tomales Petaluma Rd	4,512	88.0%	12.0%	93.1%	4.0%	0.2%	2.7%	94.08%	3.00%	0.24%	2.68%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	4,053	86.8%	13.2%	95.4%	1.7%	0.2%	2.7%	95.94%	1.11%	0.21%	2.73%
Pt Reyes Petaluma Rd to A St	5,864	86.0%	14.0%	94.7%	2.4%	0.2%	2.7%	94.69%	2.38%	0.24%	2.70%
A Street to Sir Francis Drake Blvd	6,224	85.8%	14.2%	94.3%	2.8%	0.2%	2.7%	94.57%	2.52%	0.22%	2.70%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	5,119	84.9%	15.1%	94.8%	2.3%	0.2%	2.7%	95.62%	1.49%	0.16%	2.73%
Sir Francis Drake Blvd to County Limit	15,728	83.6%	16.4%	94.0%	3.2%	0.1%	2.7%	95.36%	1.79%	0.12%	2.72%
SR-37											
U.S. 101 to Atherton Ave	39,482	84.5%	15.6%	89.4%	7.6%	0.5%	2.6%	91.43%	5.27%	0.69%	2.61%
Atherton Ave to County Limit	42,381	84.2%	15.8%	89.1%	7.9%	0.5%	2.5%	91.33%	5.36%	0.71%	2.60%
SR-131											
U.S. 101 to Trestle Glen Blvd	37,355	85.9%	14.1%	83.3%	14.2%	0.1%	2.4%	86.56%	10.79%	0.18%	2.47%

## Sheet 14: 2040 Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
Atherton Avenue									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,765	4,022	743	12	115	755	91	4	22
Butterfield Road									
Northern terminus to Sir Francis Drake Blvd	1,202	922	85	0	26	154	10	0	4
Center Boulevard									
Claus Drive to Sir Francis Drake Boulevard	16,827	12,094	1,029	5	345	3,006	260	3	86
College Avenue									
Sir Francis Drake Blvd to Estelle Ave	8,992	7,043	629	2	201	1,024	64	0	29
Corte Madera Avenue									
Bahr Lane to Redwood Ave	11,449	8,632	1,099	4	246	1,316	113	1	38
Las Galinas Avenue									
Miller Creek Rd to Lucas Valley Rd	4,992	3,820	522	8	109	474	44	2	14
Lucas Valley Rd to Freitas Pkwy	7,683	5,950	594	9	170	878	56	1	25
Freitas Pkwy to Northgate Dr	7,615	5,955	612	8	170	786	60	1	22
Lucas Valley Road									
Nicasio Valley Rd to Mt McKinley Rd	4,210	3,536	94	7	101	446	12	1	13
Mt McKinley Rd to Mt Muir Ct	5,563	4,564	211	7	130	607	26	1	17
Mt. Muir Court to Huckleberry Road	6,724	5,413	345	7	154	740	42	1	21
Huckleberry Rd to U.S. 101	7,113	5,584	534	7	159	743	64	1	21
Magnolia Avenue									
Estelle Ave to Doherty Dr	10,136	7,891	852	3	225	1,069	65	0	30
Doherty Dr to Bahr Ln	10,818	8,206	1,053	4	234	1,191	95	1	34
Miller Creek Road									
Lucas Valley Rd to Las Galinas Ave	2,460	1,888	180	1	54	309	19	0	9
Las Galinas Ave to U.S. 101	7,979	6,067	802	9	173	833	70	2	24
Nicasio Valley Road									
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,779	4,025	76	7	115	530	10	1	15
Lucas Valley Rd to Sir Francis Drake Blvd	1,322	1,109	11	0	32	165	1	0	5
North San Pedro Road									
U.S. 101 to Bucks Landing	8,316	6,456	642	6	184	935	65	1	27
Novato Boulevard									
Pt. Reyes Petaluma Rd to Indian Valley	6,870	5,431	302	6	155	913	36	1	26
Indian Valley to San Marin Dr	8,209	6,414	450	6	183	1,071	54	1	31
San Marin Dr to Simmons Lane	11,411	8,737	753	4	249	1,523	101	1	43
Simmons Lane to Diablo Ave	11,411	8,737	753	4	249	1,523	101	1	43
Diablo Ave to Rowland Blvd	6,045	4,578	570	4	130	682	60	1	19
Rowland Blvd to U.S. 101	6,045	4,578	570	4	130	682	60	1	19

Petaluma Point Reyes Road									
San Antonio Rd to Novato Blvd	4,888	3,852	297	16	110	555	39	4	16
Novato Blvd to Nicasio Valley Rd	6,002	4,855	237	13	138	705	31	3	20
Nicasio Valley Rd to Shoreline Hwy	5,651	4,625	167	10	132	676	21	2	19
Red Hill Avenue									
Sir Francis Drake Blvd to Ross Valley Dr	28,310	20,915	2,762	16	596	3,579	335	4	102
San Marin Drive									
Novato Blvd to U.S. 101	5,143	3,692	589	5	105	660	72	1	19
Sir Francis Drake Boulevard									
SR 1 to Platform Bridge Rd	4,896	3,899	109	6	111	736	13	1	21
Platform Bridge Rd to Lagunitas Rd	4,737	3,696	113	3	105	785	13	0	22
Lagunitas Rd to Nicasio Valley Rd	6,101	4,744	168	3	135	1,002	19	1	29
Nicasio Valley Rd to Olema Rd	8,855	6,860	326	3	196	1,391	40	0	40
Olema Rd to Red Hill Ave	15,605	11,969	1,403	7	341	1,731	104	1	49
Redwood Avenue									
Corte Madera Ave to Tamalpais Dr	10,720	8,115	1,139	8	231	1,102	92	1	31
Tamalpais Drive									
Redwood Ave to U.S. 101	13,205	9,976	1,378	10	284	1,392	123	2	40
Tomales Petaluma Road									
SR 1 to Valley Ford Rd/Spring Hill Rd	3,251	2,468	246	5	70	418	30	1	12
2 <sup>nd</sup> Street									
4 <sup>th</sup> St to 3rd St	26,132	19,172	2,693	21	546	3,278	324	5	93
3rd St to Hetherton St	26,132	19,172	2,693	21	546	3,278	324	5	93
4 <sup>th</sup> Street									
Red Hill Ave to 2 <sup>nd</sup> St	30,222	22,168	3,095	18	632	3,822	372	5	109
U.S. 101									
County Limit to SR 37	119,820	80,600	10,840	604	2,302	23,207	1,419	186	662
SR 37 to I-580	119,821	144,127	18,225	736	4,113	34,509	2,303	215	0
I-580 to County Limit	119,822	114,791	13,683	449	3,279	26,339	1,706	124	752
I-580									
U.S. 101 to County Limit	<b>88,876</b>	61,536	6,700	91	1,752	17,500	773	26	498
SR-1									
North County Limit to Tomales Petaluma Rd	4,512	3,696	159	9	105	511	16	1	15
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	4,053	3,355	59	8	96	512	6	1	15
Pt Reyes Petaluma Rd to A St	5,864	4,778	122	9	136	776	19	2	22
A Street to Sir Francis Drake Blvd	6,224	5,039	151	9	144	834	22	2	24
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	5,119	4,124	100	7	118	737	12	1	21
Sir Francis Drake Blvd to County Limit	15,728	12,356	420	14	352	2,465	46	3	70
SR-37									
U.S. 101 to Atherton Ave	39,482	29,818	2,517	157	850	5,613	324	42	160
Atherton Ave to County Limit	39,483	31,795	2,819	178	892	6,116	359	48	174
SR-131									
U.S. 101 to Trestle Glen Blvd	37,355	26,735	4,558	32	770	4,553	568	9	130

Sheet 15: EMFAC Vehicle Population Information

<b>TNM 3.1/EMFAC2021 VEHICLE POPULATION INFORMATION (Unadjusted)</b>					
<b>TNM Vehicle Type</b>	<b>Vehicle Class (EMFAC2007)</b>	<b>2019 Vehicle Population</b>	<b>2019 Vehicle Population %</b>	<b>2040 Vehicle Population</b>	<b>2040 Vehicle Population %</b>
Auto	LDA	122,480	50.3%	118,384	47.1%
Auto	LDT1	14,833	6.1%	8,415	3.3%
Auto	LDT2	57,904	23.8%	66,236	26.3%
Auto	LHDT1	6,888	2.8%	7,323	2.9%
Auto	MDV	29,137	12.0%	38,707	15.4%
<b>Subtotal</b>		<b>231,241</b>	<b>95.0%</b>	<b>239,065</b>	<b>95.1%</b>
Medium Truck	LHDT2	1,333	0.5%	1,845	0.7%
Medium Truck	MHDT	2,016	0.8%	2,080	0.8%
Medium Truck	OBUS	191	0.1%	133	0.1%
Medium Truck	SBUS	165	0.1%	160	0.1%
<b>Subtotal</b>		<b>3,706</b>	<b>1.5%</b>	<b>4,218</b>	<b>1.7%</b>
Heavy Truck	HHDT	833	0.3%	1,154	0.5%
Heavy Truck	MH	807	0.3%	587	0.2%
Heavy Truck	UBUS	108	0.0%	113	0.0%
<b>Subtotal</b>		<b>1,748</b>	<b>0.7%</b>	<b>1,854</b>	<b>0.7%</b>
Motorcycle	MC	6,592	2.7%	6,288	2.5%
<b>Subtotal</b>		<b>6,592</b>	<b>2.7%</b>	<b>6,288</b>	<b>2.5%</b>
<b>TOTAL</b>		<b>243,286</b>	<b>100.0%</b>	<b>251,425</b>	<b>100.0%</b>
Table Notes:					
A) EMFAC2021 raw data file is available upon request.					

<b>TNM 3.1/EMFAC2021 VEHICLE POPULATION INFORMATION (Excluding MHDT and HHDT)</b>					
<b>TNM Vehicle Type</b>	<b>Vehicle Class (EMFAC2007)</b>	<b>2019 Vehicle Population</b>	<b>2019 Vehicle Population %</b>	<b>2040 Vehicle Population</b>	<b>2040 Vehicle Population %</b>
Auto	LDA	122,480	51.5%	118,384	48.3%
Auto	LDT1	14,833	6.2%	8,415	3.4%
Auto	LDT2	57,904	24.3%	66,236	27.0%
Auto	LHDT1	6,888	2.9%	7,323	3.0%
Auto	MDV	29,137	12.3%	38,707	15.8%
<b>Subtotal</b>		<b>231,241</b>	<b>97.2%</b>	<b>239,065</b>	<b>97.4%</b>
Motorcycle	MC	6,592	2.8%	6,288	2.6%
<b>Subtotal</b>		<b>6,592</b>	<b>2.8%</b>	<b>6,288</b>	<b>2.6%</b>
<b>TOTAL</b>		<b>237,833</b>	<b>100.0%</b>	<b>245,353</b>	<b>100.0%</b>
Table Notes:					
A) EMFAC2021 raw data file is available upon request.					

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: SMART Commuter/Freight Existing

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	66	57	60
Source 1	60	57	53
Source 2	62	38	56
Source 3	61	21	55
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

NOISE SOURCE PARAMETERS						
Parameter	Source 1		Source 2		Source 3	
Source Num.	Commuter Diesel Locomotive	2	Freight Locomotive	9	Freight Cars	10
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	distance (ft)	50
Daytime Hours (7 AM - 10 PM)	speed (mph)	79	speed (mph)	0	speed (mph)	0
	trains/hour	2	trains/hour	0	trains/hour	0
	locos/train	1	locos/train	0	length of cars (ft) / train	0
Nighttime Hours (10 PM - 7 AM)	speed (mph)	79	speed (mph)	40	speed (mph)	45
	trains/hour	0.7	trains/hour	0.1	trains/hour	0.1
	locos/train	1	locos/train	3	length of cars (ft) / train	2000
Wheel Flats?					% of cars w/ wheel flats	
Jointed Track?	Y/N	N	Y/N	N	Y/N	
Embedded Track?	Y/N	N	Y/N	N	Y/N	
Aerial Structure?	Y/N	N	Y/N	N	Y/N	
Barrier Present?	Y/N	N	Y/N	N	Y/N	
Intervening Rows of of Buildir	number of rows		number of rows		number of rows	

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.

Case: SMART Commuter/Freight Future

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	69	60	63
Source 1	63	60	56
Source 2	66	38	60
Source 3	64	21	58
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>						
Parameter	Source 1		Source 2		Source 3	
Source Num.	Commuter Diesel Locomotive	2	Freight Locomotive	9	Freight Cars	10
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	distance (ft)	50
Daytime Hours (7 AM - 10 PM)	speed (mph)	79	speed (mph)	0	speed (mph)	0
	trains/hour	4	trains/hour	0	trains/hour	0
	locos/train	1	locos/train	0	length of cars (ft) / train	0
Nighttime Hours (10 PM - 7 AM)	speed (mph)	79	speed (mph)	40	speed (mph)	40
	trains/hour	1.4	trains/hour	0.25	trains/hour	0.25
	locos/train	1	locos/train	3	length of cars (ft) / train	2000
Wheel Flats?					% of cars w/ wheel flats	
Jointed Track?	Y/N	N	Y/N	N	Y/N	
Embedded Track?	Y/N	N	Y/N	N	Y/N	
Aerial Structure?	Y/N	N	Y/N	N	Y/N	
Barrier Present?	Y/N	N	Y/N	N	Y/N	
Intervening Rows of Buildings	number of rows		number of rows		number of rows	

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.

Case: SMART Brazos Line Existing

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	64	38	58
Source 1	62	38	56
Source 2	60	21	54
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	
Daytime Hours (7 AM - 10 PM)	speed (mph)		speed (mph)		
	trains/hour		trains/hour		
	locos/train		length of cars (ft) / train		
Nighttime Hours (10 PM - 7 AM)	speed (mph)	40	speed (mph)	40	
	trains/hour	0.1	trains/hour	0.1	
	locos/train	3	length of cars (ft) / train	2000	
Wheel Flats?			% of cars w/ wheel flats	5.00%	
Jointed Track?	Y/N	N	Y/N	N	
Embedded Track?	Y/N	N	Y/N	N	
Aerial Structure?	Y/N	N	Y/N	N	
Barrier Present?	Y/N	N	Y/N	N	
Intervening Rows of Buildings	number of rows		number of rows		

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: SMART Brazos Line Future

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	68	38	62
Source 1	66	38	60
Source 2	64	21	58
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	
Daytime Hours (7 AM - 10 PM)	speed (mph)		speed (mph)		
	trains/hour		trains/hour		
	locos/train		length of cars (ft) / train		
Nighttime Hours (10 PM - 7 AM)	speed (mph)	40	speed (mph)	40	
	trains/hour	0.25	trains/hour	0.25	
	locos/train	3	length of cars (ft) / train	2000	
Wheel Flats?			% of cars w/ wheel flats	5.00%	
Jointed Track?	Y/N	N	Y/N	N	
Embedded Track?	Y/N	N	Y/N	N	
Aerial Structure?	Y/N	N	Y/N	N	
Barrier Present?	Y/N	N	Y/N	N	
Intervening Rows of Buildings	number of rows		number of rows		



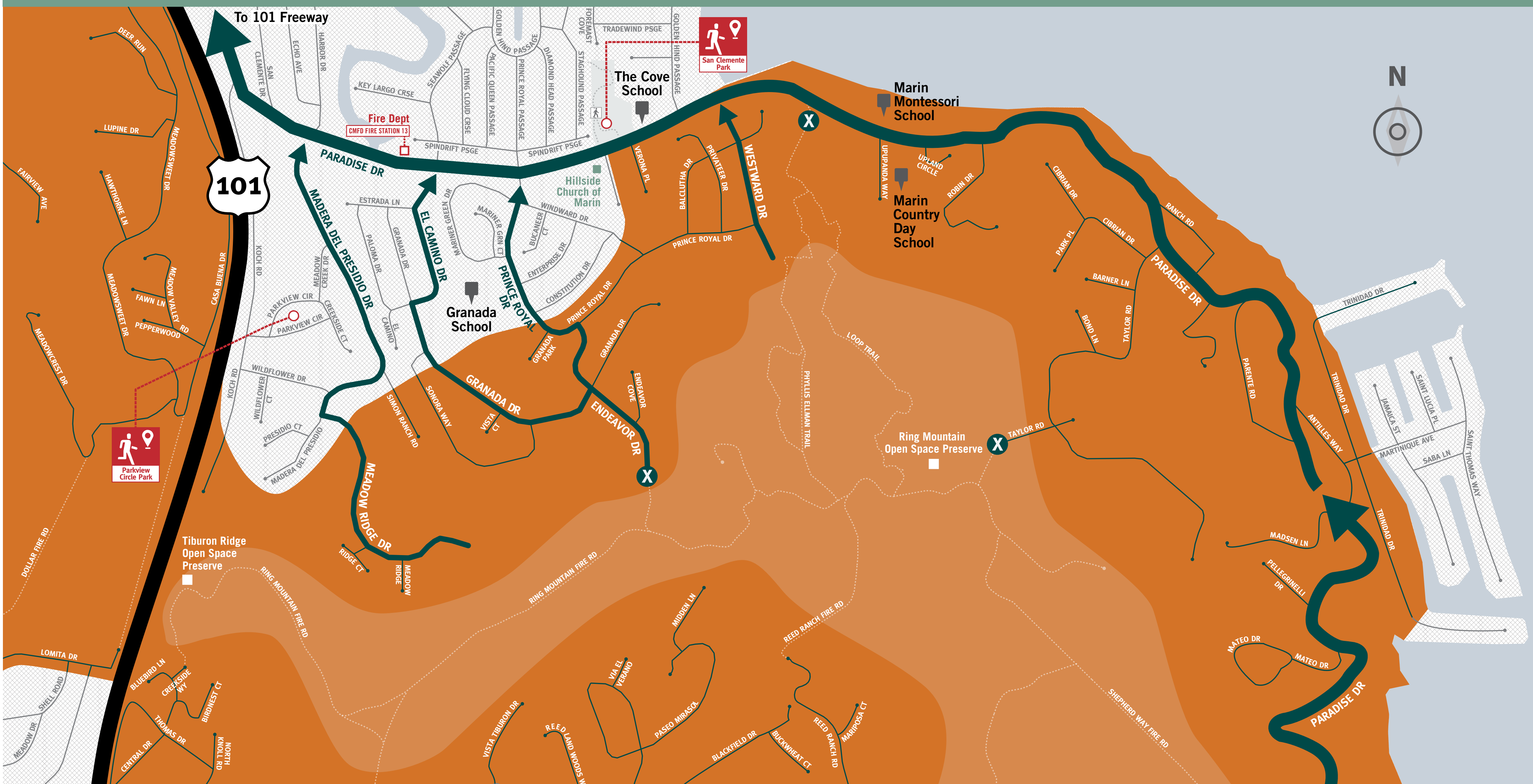
## **Appendix I: Supplemental Wildfire Information**

---

*This page is intentionally blank.*

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## East Corte Madera

- Severe Fire Risk
- High Fire Risk
- Fire Dept
- Schools
- Temporary Refuge Area
- Evacuation Routes
- Gate / No Access

CENTRAL MARIN FIRE DEPT  
www.centralmarinfire.org



In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

### EMERGENCY TERMINOLOGY

**EVACUATION ORDER: Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

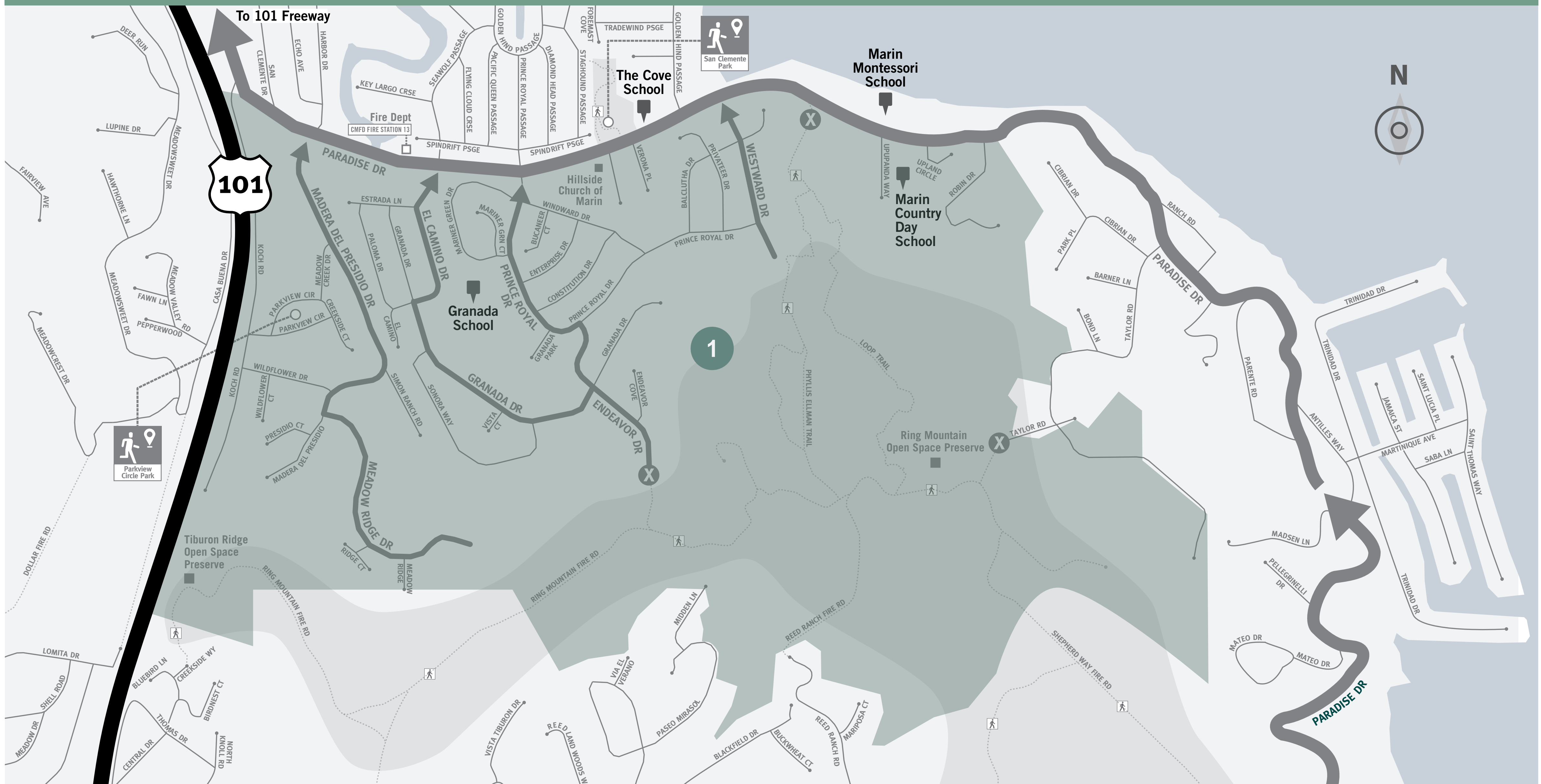
**EVACUATION WARNING:** Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

**SHELTER IN PLACE: Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

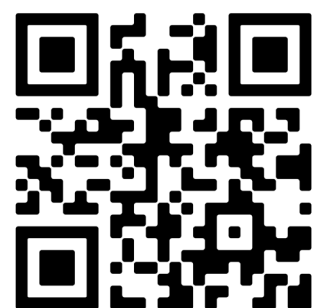
Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



ZONE AREA

1

## East Corte Madera



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

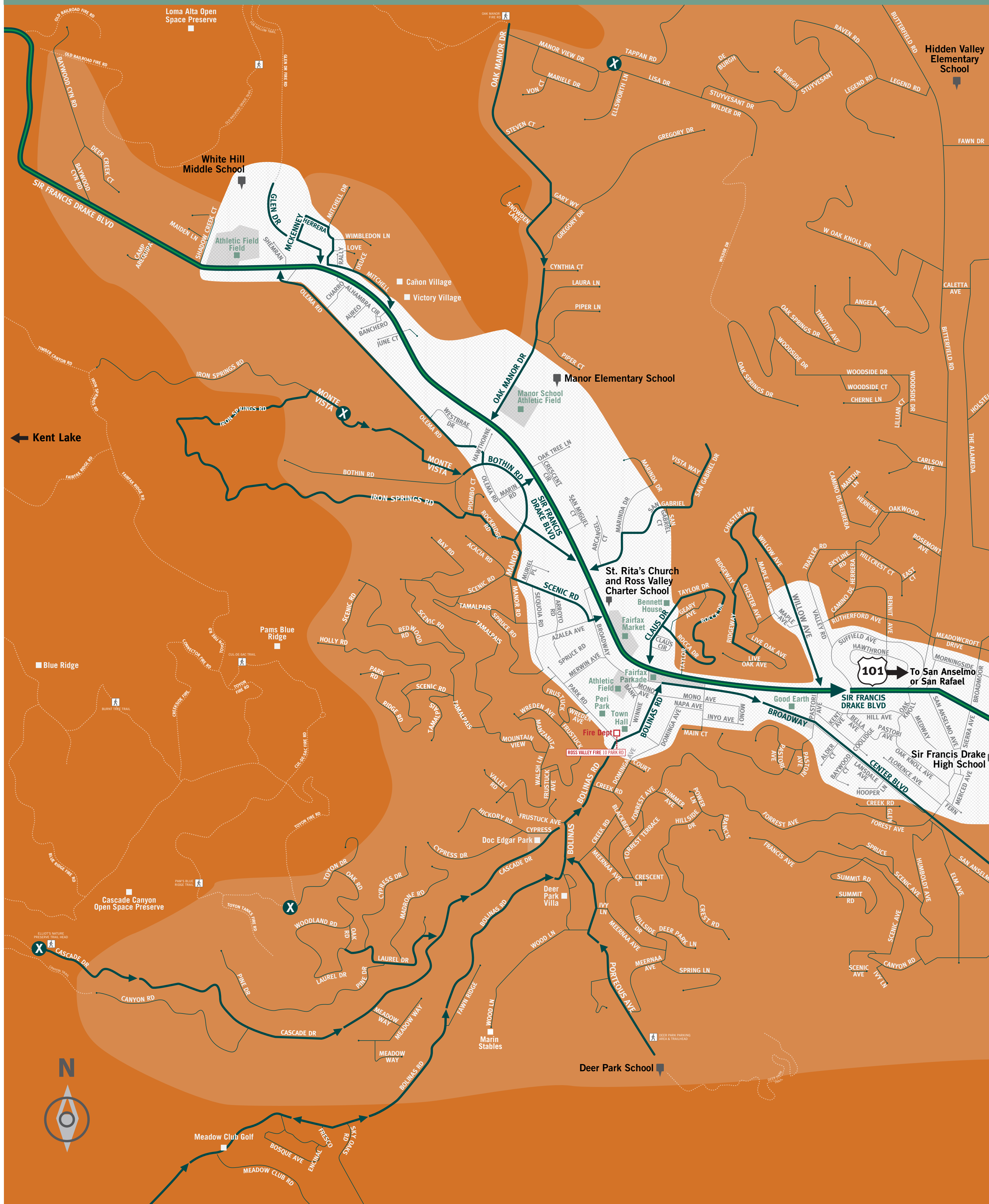
**Never evacuate uphill**, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

## EMERGENCY NOTIFICATIONS

### EVACUATION ORDER

Moving community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

### EVACUATION WARNING

Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away.

## Town of Fairfax

- Severe Fire Risk
- High Fire Risk
- Fire Dept
- Evacuation Routes
- Safe Route  
EVEN IN TRAFFIC
- Schools
- Gate / No Access

**ROSS VALLEY FIRE DEPT**  
[www.rossvalleyfire.org](http://www.rossvalleyfire.org)

**TOWN OF FAIRFAX**  
[www.townoffairfax.org](http://www.townoffairfax.org)

**FIRE Safe**  
**MARIN**  
[www.firesafemarin.org](http://www.firesafemarin.org)

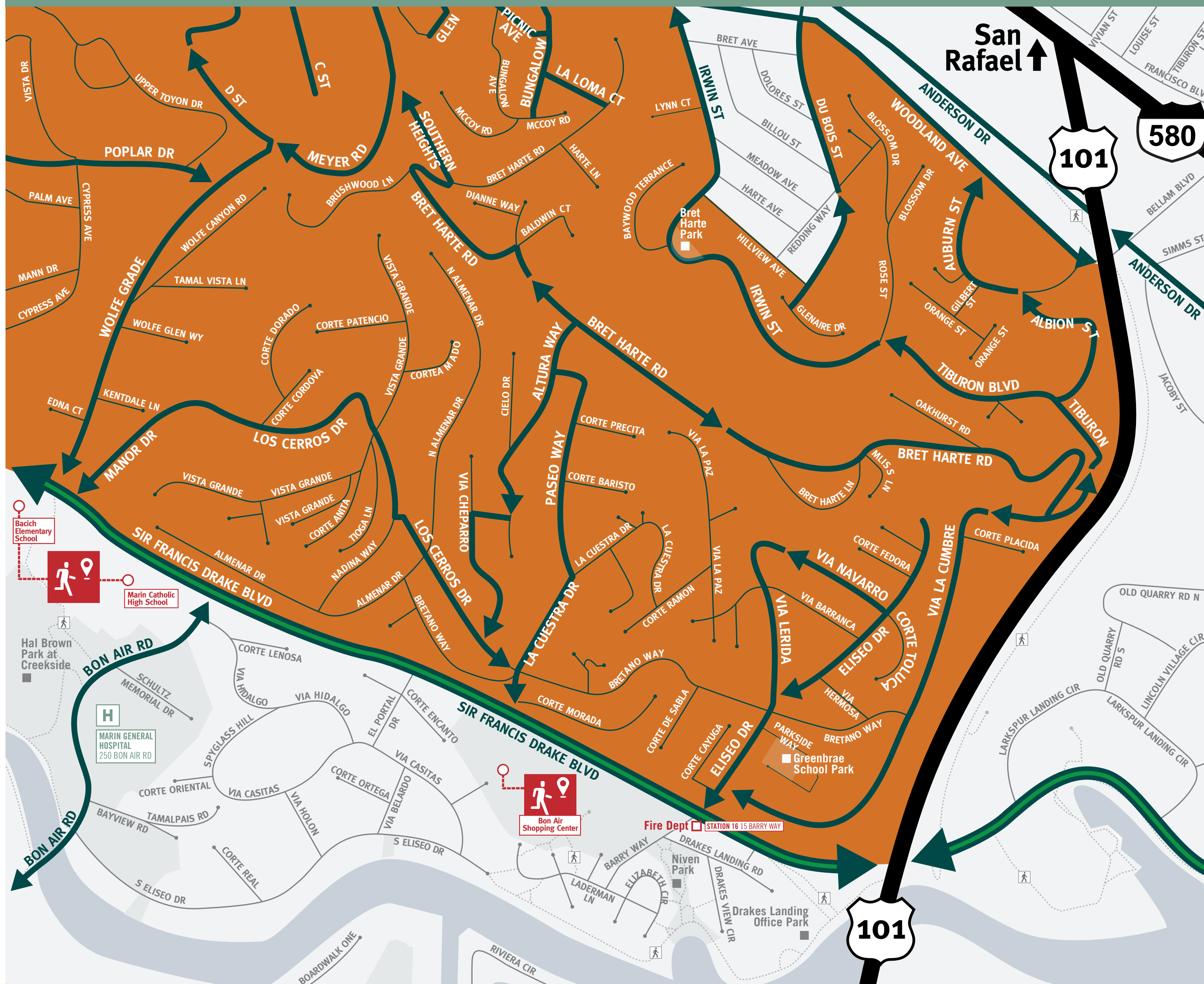


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Know your way out.

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Greenbrae

- Severe Fire Risk
- Fire Dept
- Temporary Refuge Area
- Schools
- Evacuation Routes
- Safe Route  
EVEN IN TRAFFIC

KENTFIELD FIRE PROTECTION DISTRICT  
[www.kentfieldfire.org](http://www.kentfieldfire.org)

CENTRAL MARIN FIRE DEPT  
[www.centralmarinfire.org](http://www.centralmarinfire.org)

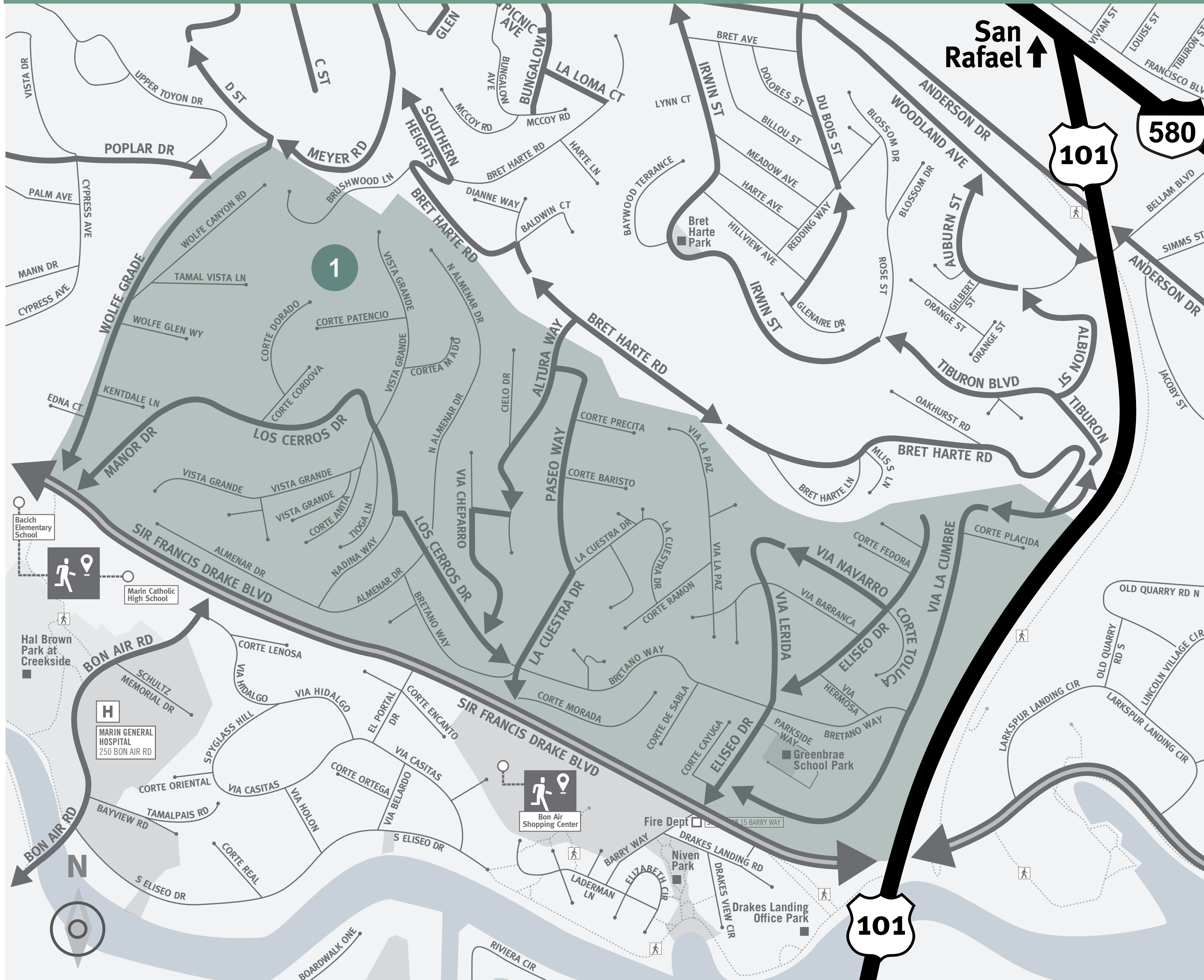


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Your neighborhood zones

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



ZONE AREA

1

## Greenbrae



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.

KENTFIELD FIRE PROTECTION DISTRICT  
[www.kentfieldfire.org](http://www.kentfieldfire.org)

CENTRAL MARIN FIRE DEPT  
[www.centralmarinfire.org](http://www.centralmarinfire.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
 DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES.

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

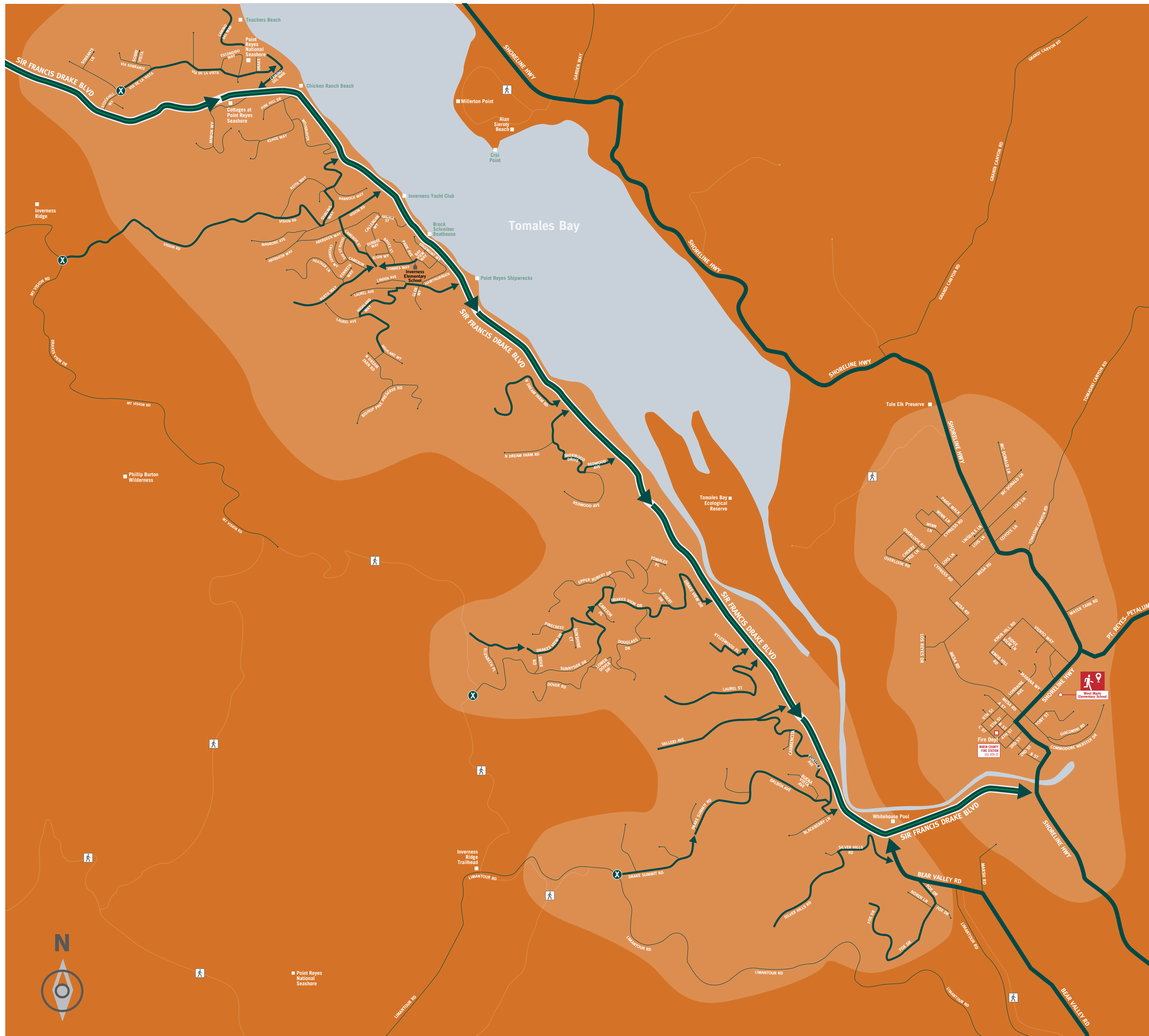
**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



## Inverness

- WUI Elevated Risk
- Fire Dept
- Schools
- Evacuation Routes
- Safety Buffer on Sir Francis Drake Blvd
- Gate / No Access
- Temporary Refuge Area

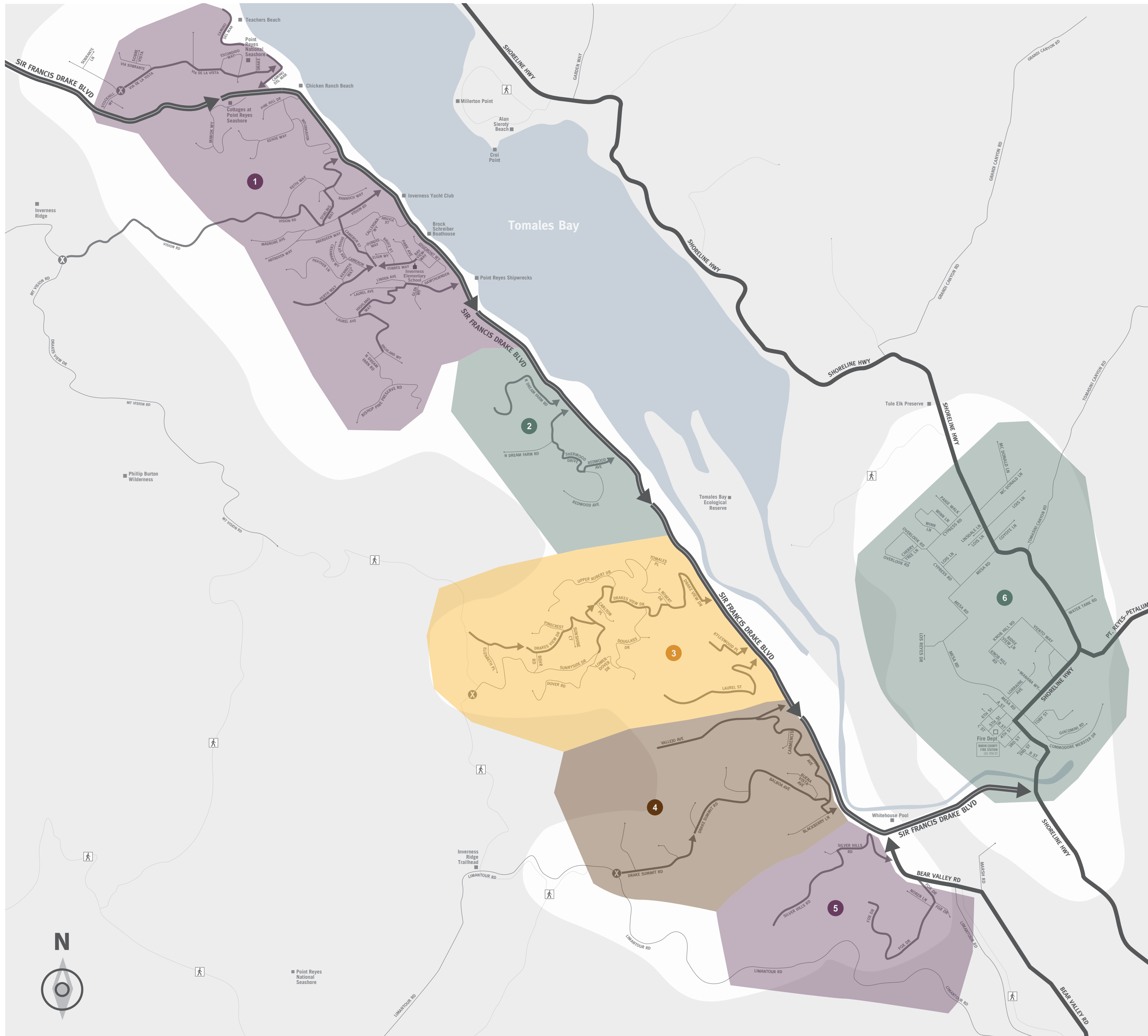
MARIN COUNTY FIRE DEPT  
www.marincountyfire.org





# Your neighborhood zones.

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



## Inverness

Download the individual zone map for alert and warning information and further sources.



ZONE AREA  
**1** Inverness



ZONE AREA  
**2** Dreamfarm



ZONE AREA  
**3** Drakes View



ZONE AREA  
**4** Inverness Park



ZONE AREA  
**5** Silverhills



ZONE AREA  
**6** Point Reyes

MARIN COUNTY FIRE DEPT  
[www.marincountyfire.org](http://www.marincountyfire.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Nicasio

-  WUI Area  
ELEVATED RISK
-  Evacuation Routes
-  Fire Dept
-  Gate / No Access

MARIN COUNTY FIRE DEPT  
[www.marincounty.org](http://www.marincounty.org)

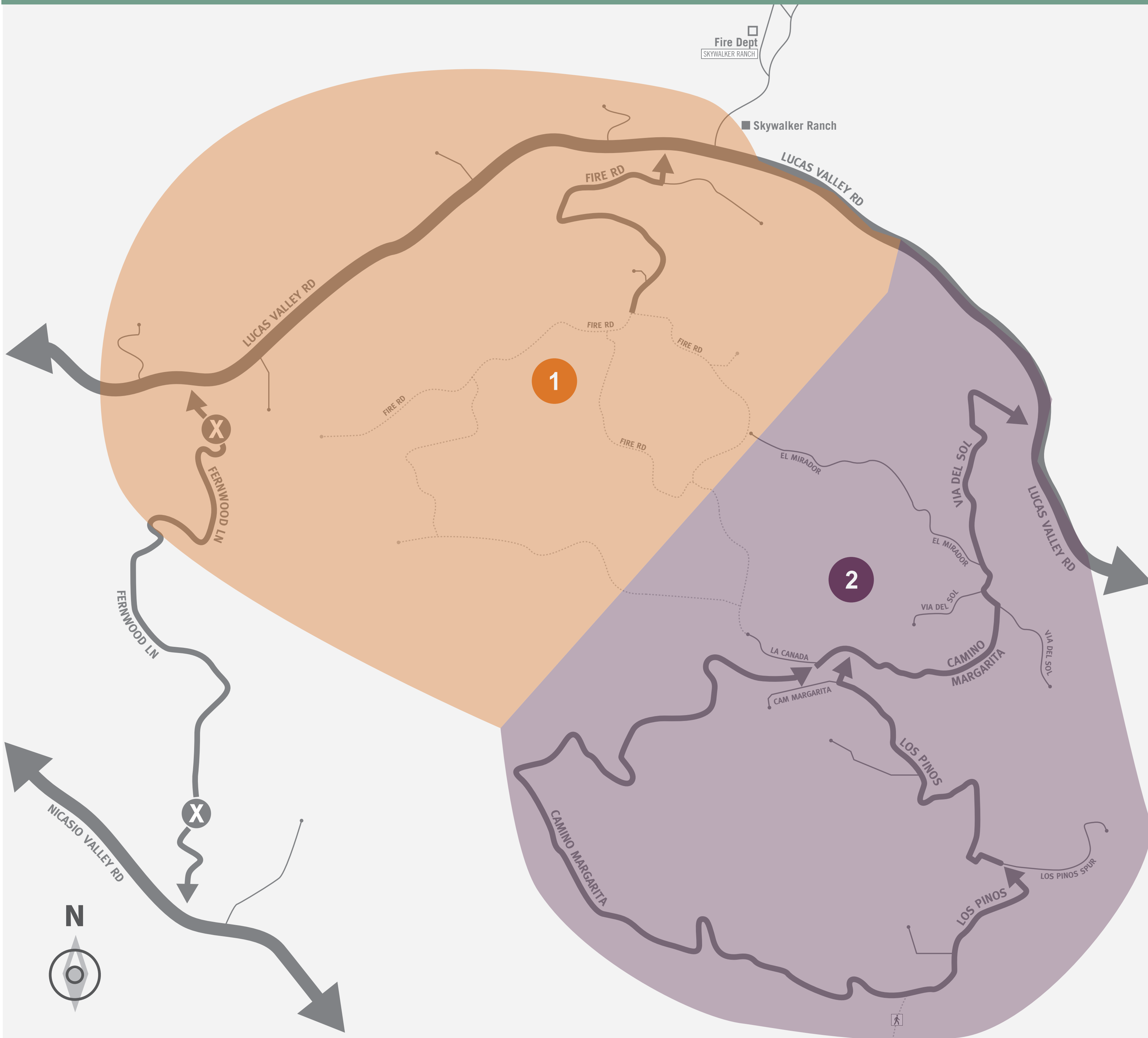


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Your neighborhood zone

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



## Nicasio

Download the individual zone map for alert and warning information and further sources.



ZONE AREA

1

**Rancho Santa Margarita WEST**



ZONE AREA

2

**Rancho Santa Margarita EAST**

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.

MARIN COUNTY FIRE DEPT

[www.marincounty.org](http://www.marincounty.org)



[www.firesafemarin.org](http://www.firesafemarin.org)



[www.marincounty.org](http://www.marincounty.org)

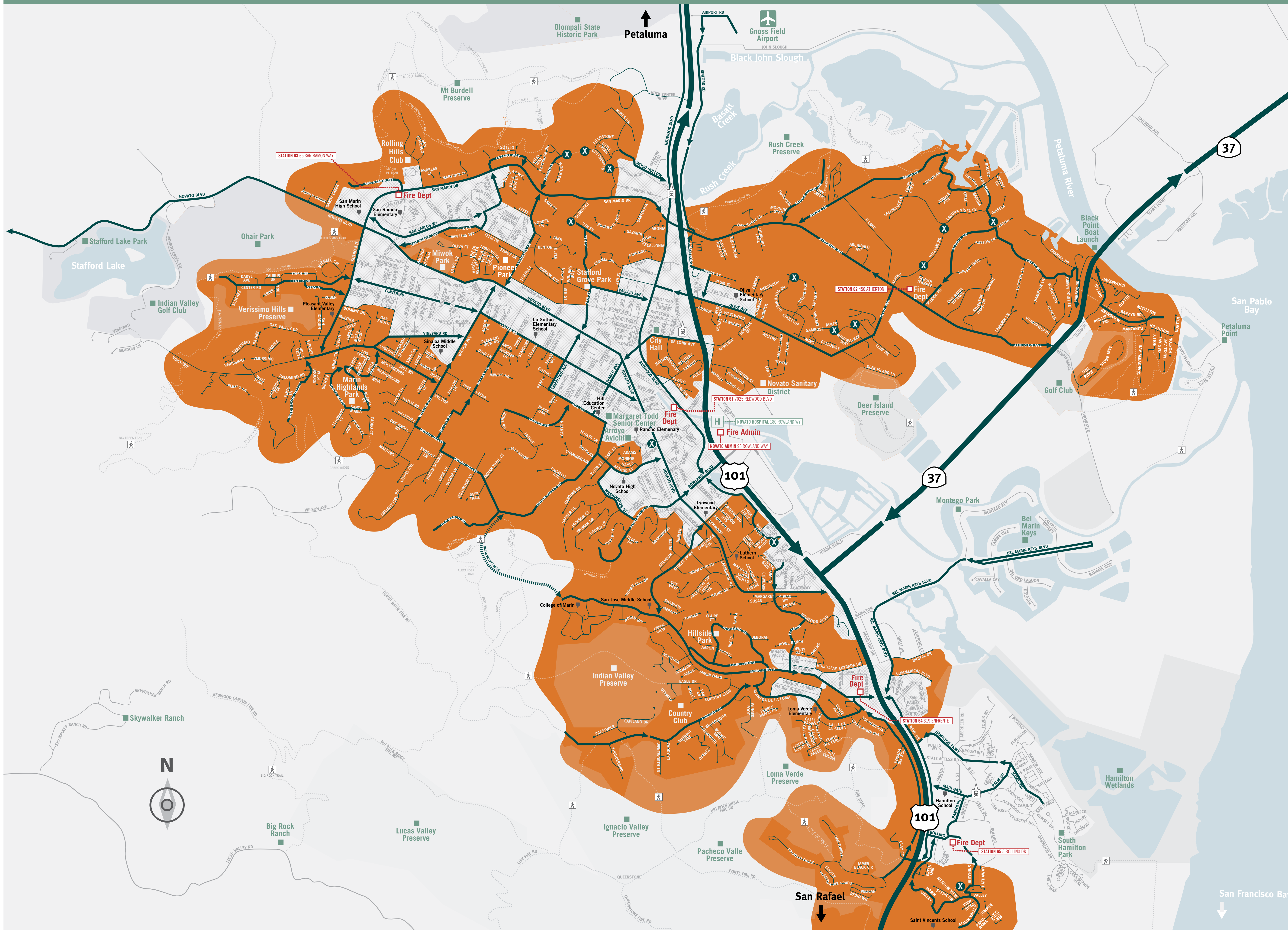


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

## EMERGENCY NOTIFICATIONS

### EVACUATION ORDER

Moving community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

### EVACUATION WARNING

Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away.

## Novato

- Severe Fire Risk
- High Fire Risk
- Schools
- Trails
- Fire Dept
- Evacuation Routes
- Gate / No Access

**NOVATO FIRE DISTRICT**  
[www.novatofire.org](http://www.novatofire.org)

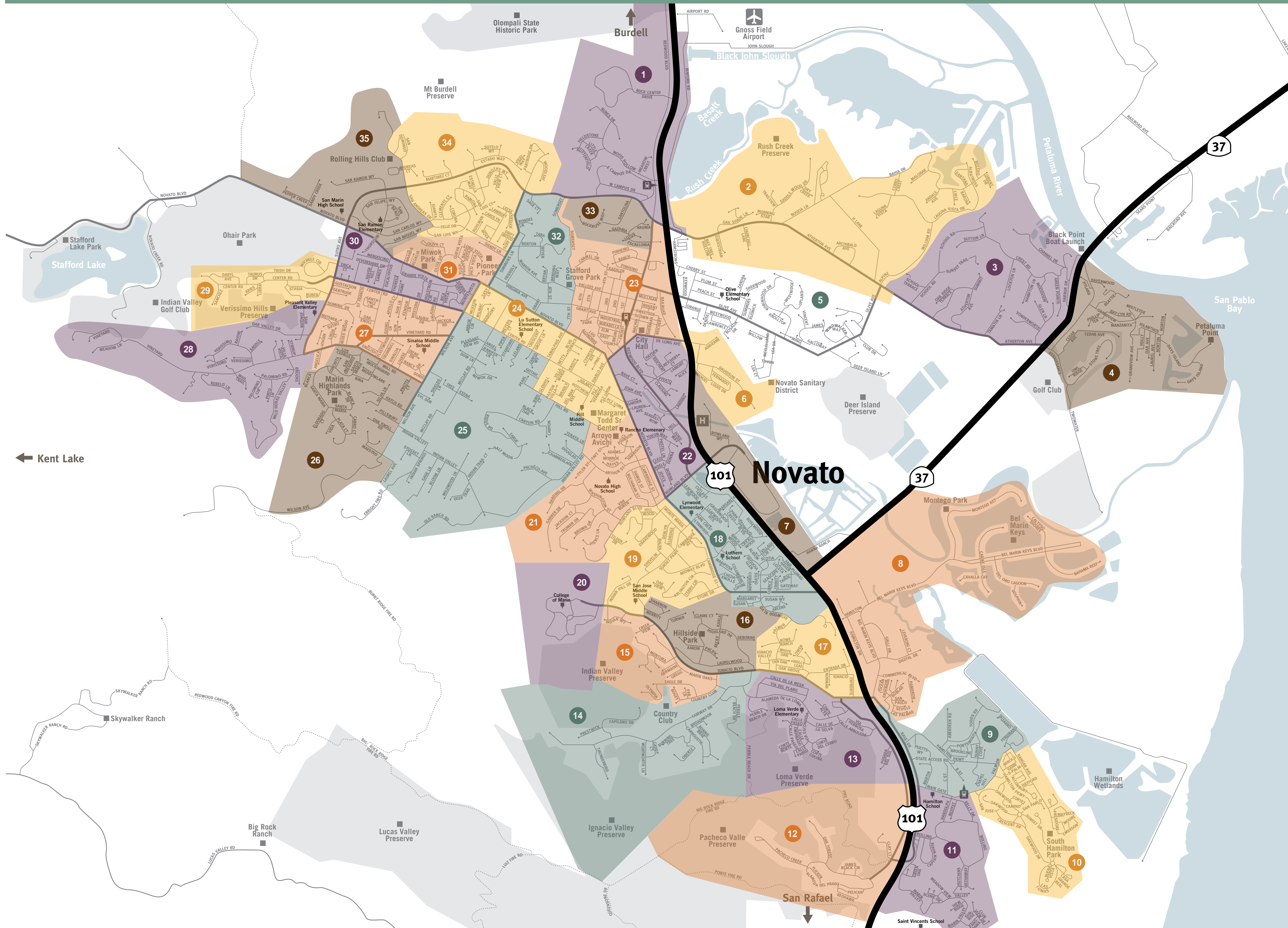


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
 DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Your neighborhood zones

Note where you and your family members live, work and go to school. Then mark down these locations on this map. Zones will be used by city officials to expedite evacuations.

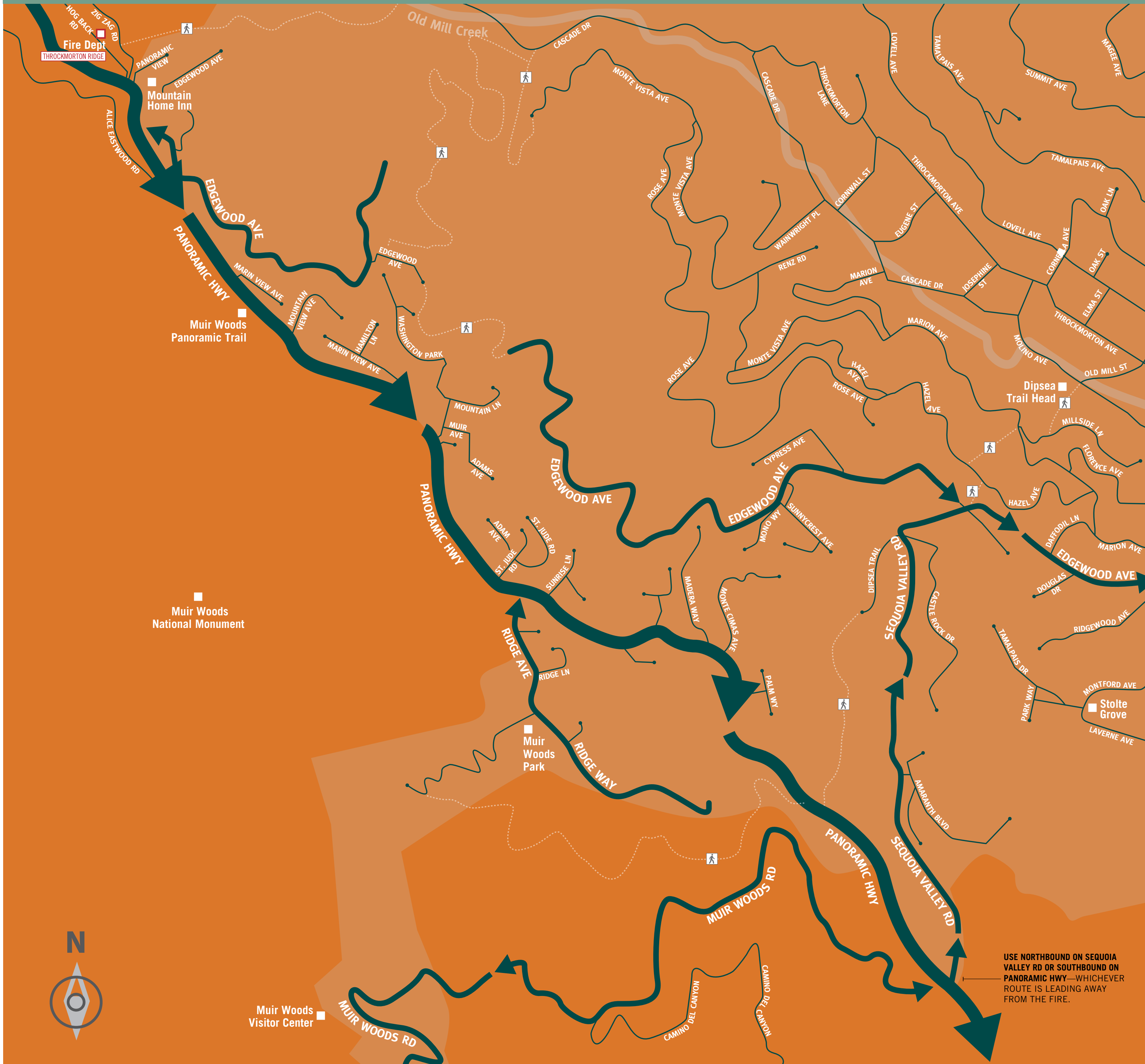


- 1 Wood Hollow
- 2 Bahia
- 3 Green Point
- 4 Black Point
- 5 Olive
- 6 Davidson
- 7 Vintage
- 8 Bel Marin Keys
- 9 North Hamilton
- 10 South Hamilton
- 11 Marin Valley
- 12 Pacheco Valle
- 13 Alameda de la Loma
- 14 Fairway
- 15 Marin Oaks
- 16 Highland
- 17 Palmer
- 18 South Novato Blvd
- 19 Sunset
- 20 Indian Valley College
- 21 Presidents
- 22 Rowland
- 23 Grant
- 24 Center
- 25 Indian Valley
- 26 Santa Maria
- 27 Vineyard
- 28 Wildhorse Valley
- 29 Trish
- 30 Eucalyptus
- 31 Oliva
- 32 Simmons
- 33 Santolina
- 34 San Andreas
- 35 San Marin



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Panoramic

- WUI Area ELEVATED RISK
- Evacuation Routes
- Fire Dept

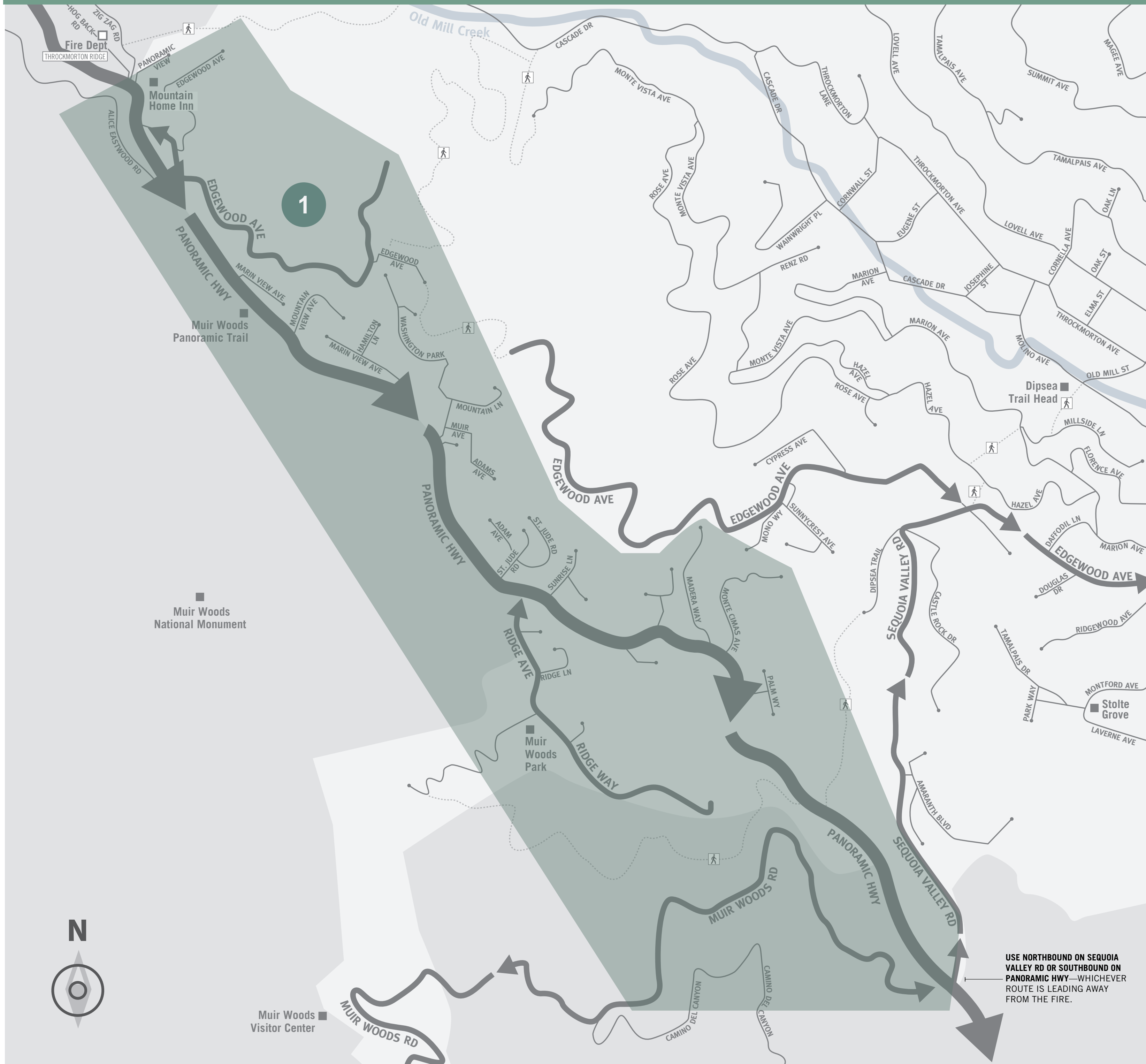


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Your neighborhood zone

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



ZONE AREA

1

## Panoramic



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.



[www.firesafemarin.org](http://www.firesafemarin.org)



[www.marincounty.org](http://www.marincounty.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



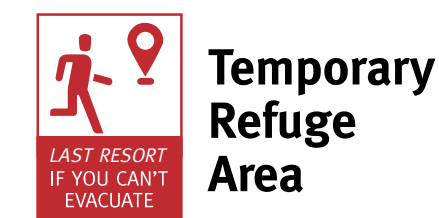
# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

## Ross Valley



Temporary  
Refuge  
Area



Schools



Evacuation Routes



Gate / No Access



Lower Risk Area

Safe Route EVEN IN TRAFFIC

WUI ELEVATED RISK



Fire Dept

In marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

### EMERGENCY TERMINOLOGY

#### EVACUATION ORDER

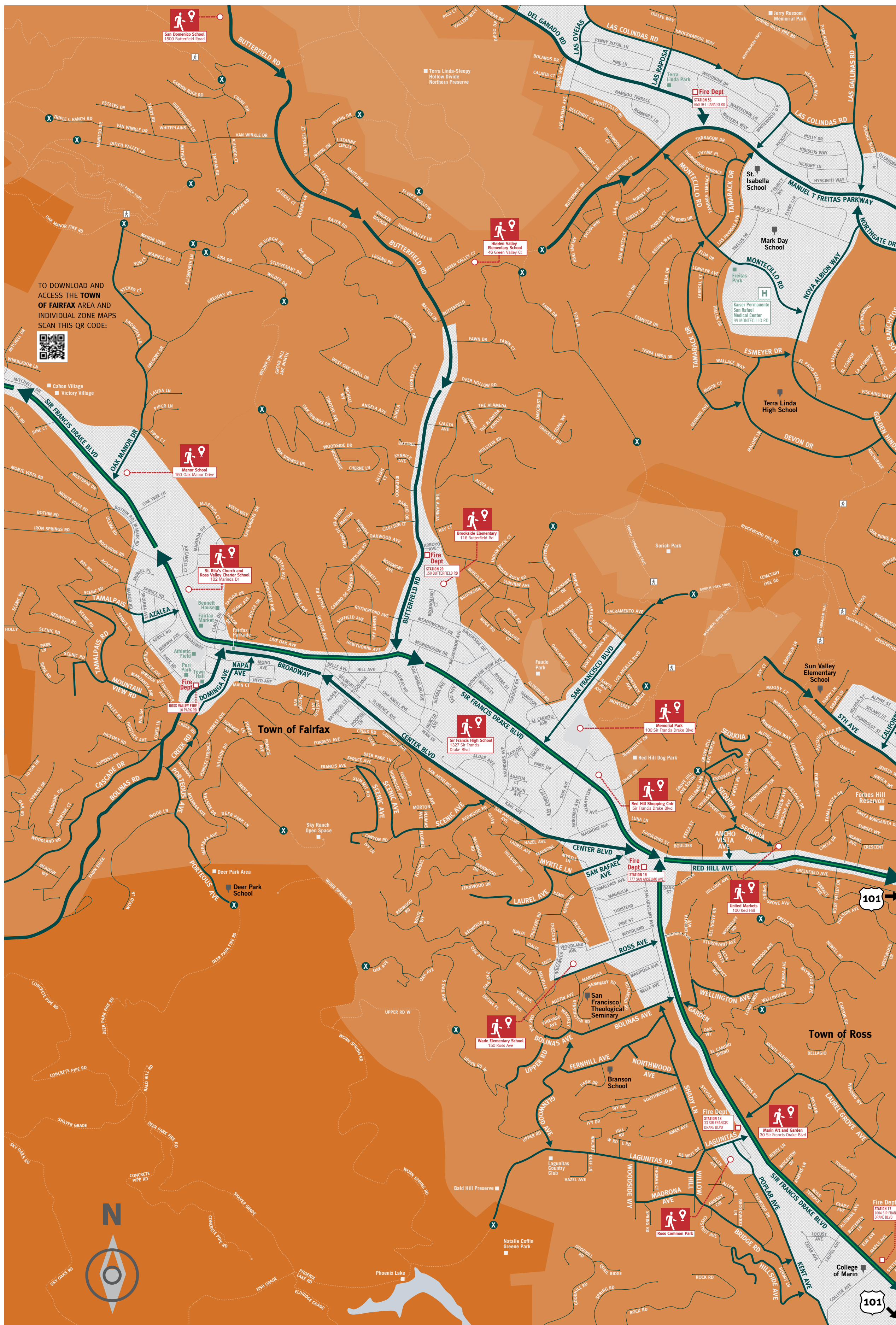
**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

#### EVACUATION WARNING

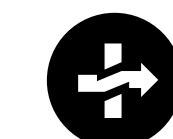
Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

#### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



ROSS VALLEY FIRE DEPARTMENT  
www.rossvalleyfire.org



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



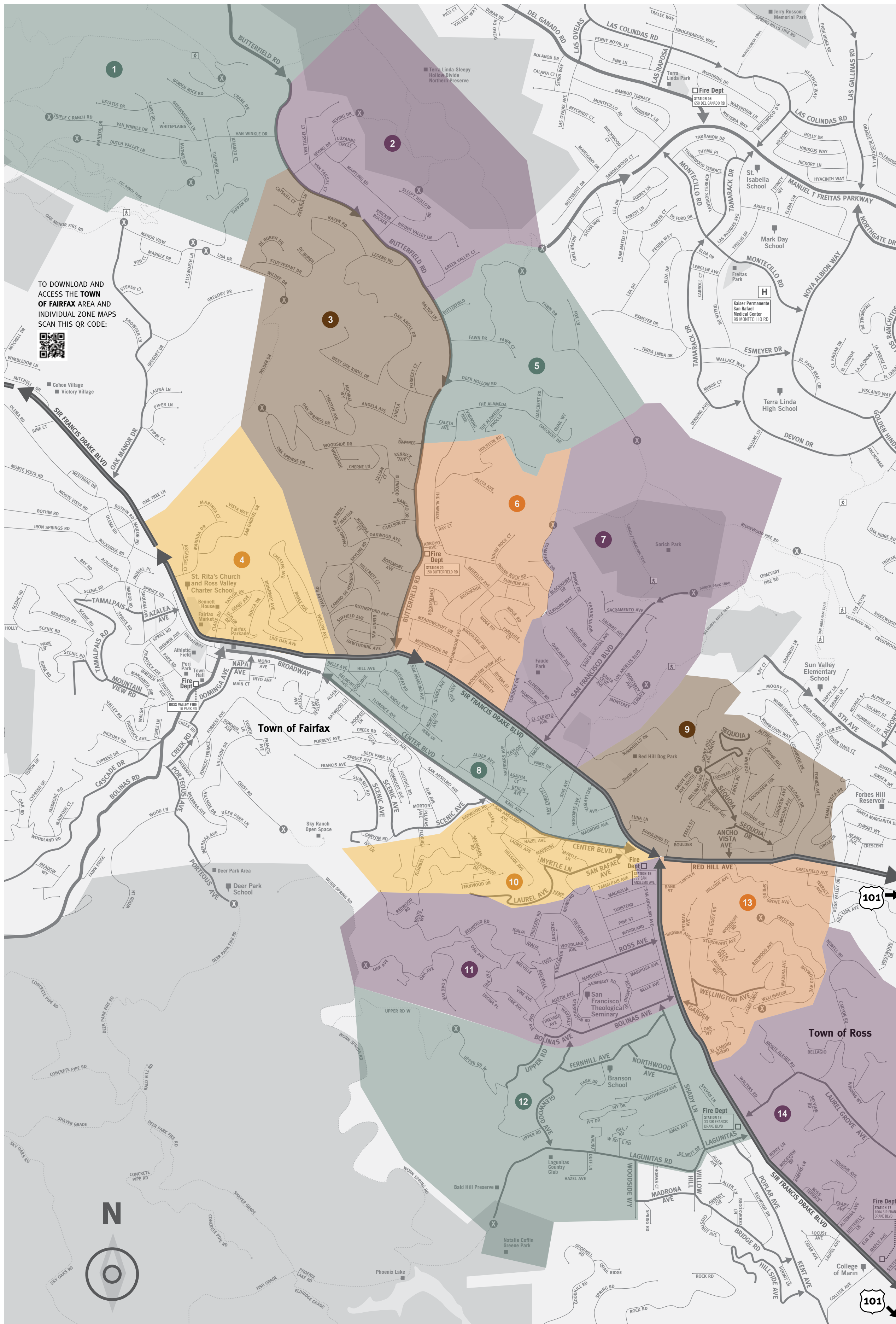
# Your neighborhood zones.

## YOUR CITYWIDE EVACUATION ROUTES

Note where you and your family members live, work and go to school. Then mark down these locations on this map.

### Ross Valley

Download the individual zone map for alert and warning information and further sources.




ZONE AREA  

**1 Van Winkle**

ZONE AREA  

**6 Alameda**

ZONE AREA  

**11 Oak**

ZONE AREA  

**2 Irving**

ZONE AREA  


**7 San Francisco Blvd**

ZONE AREA  

**12 Shady**

ZONE AREA  

**3 Legend/Herrera**

ZONE AREA  

**8 Drake**

ZONE AREA  

**13 Wellington**

ZONE AREA  

**4 Ridgeway**

ZONE AREA  

**9 Sequoia**

ZONE AREA  

**14 Kentfield**

ZONE AREA  

**5 Fawn**

ZONE AREA  

**10 Redwood**

### EVACUATION TIPS

**What to wear?**  
 Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

**Where to go?**  
 Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

**Just incase...**  
 Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.



# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## San Geronimo

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

- WUI Area ELEVATED RISK
- Fire Dept
- Temporary Refuge Area
- Schools
- Evacuation Routes
- Safe Route EVEN IN TRAFFIC
- Gate / No Access
- Safety Buffer on Sir Francis Drake Blvd

MARIN COUNTY FIRE DEPT  
www.marincounty.org



### EMERGENCY TERMINOLOGY

**EVACUATION ORDER: Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

**EVACUATION WARNING:** Prepare to evacuate as soon as possible. A short delay to gather

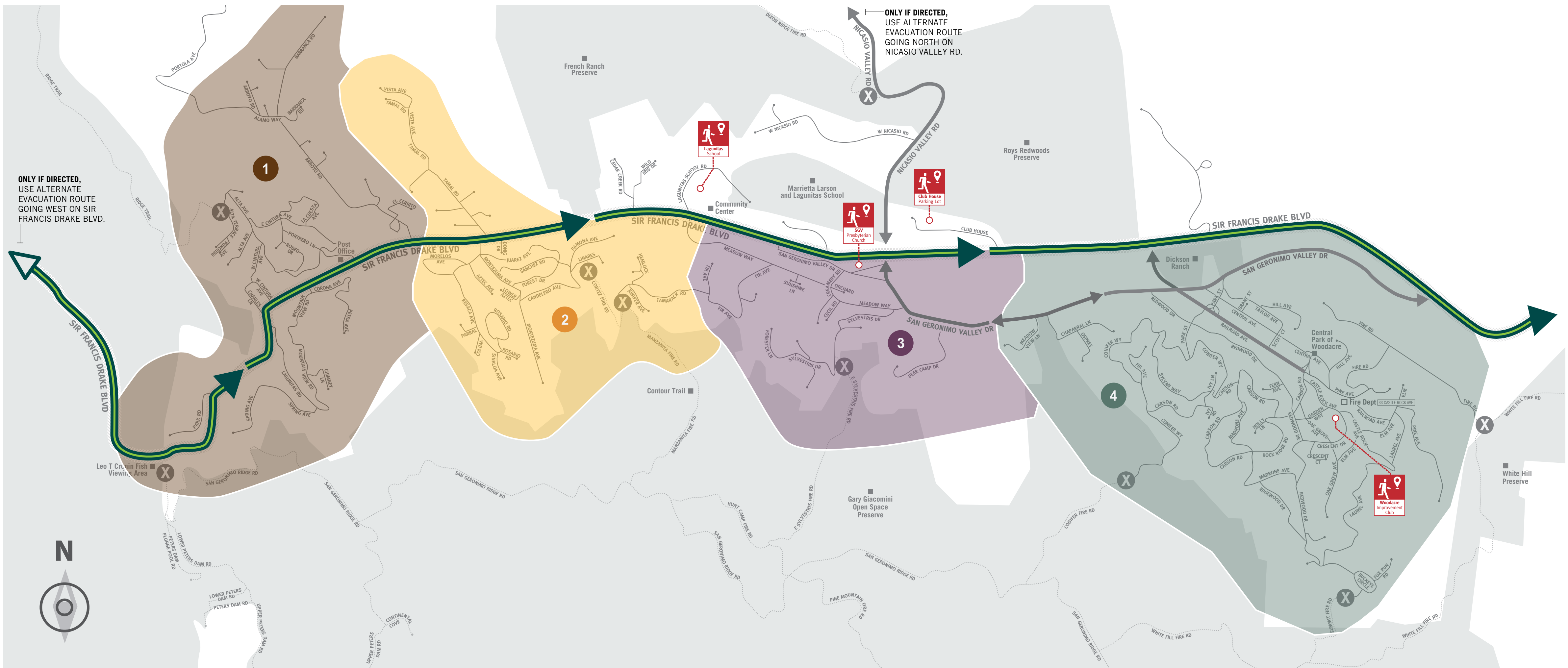
valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

**SHELTER IN PLACE:** Stay in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



# Your neighborhood zones

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## San Geronimo

Download the individual zone map for alert and warning information and further sources.

ZONE AREA  
**1 Lagunitas**

ZONE AREA  
**3 San Geronimo**

ZONE AREA  
**2 Forest Knolls**

ZONE AREA  
**4 Woodacre**

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.