Land Use Element and Safety Element Draft Program Environmental Impact Report

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Land Use Element and Safety Element Draft Program Environmental Impact Report

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND PURPOSE

The Draft Program Environmental Impact Report (PEIR) assesses the potential environmental effects of the adoption and implementation of updates to the City of Ferndale (City) General Plan Land Use and Safety Elements (herein collectively referred to as "Project" or "proposed Project").

This Draft EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (Public Resources Code (PRC), Section 21000 et seq.) and the *Guidelines for Implementation of CEQA Guidelines* published by the Public Resources Agency of the State of California (California Code of Regulations, Title 14, Section 15000 et seq.).

CEQA requires that discretionary decisions by public agencies be subject to environmental review. The City is the lead agency for the preparation of this EIR as defined by the *CEQA Guidelines* (PRC Section 21067 as amended), and the content of the document reflects the independent judgment of the City.

This PEIR is intended to provide information to public agencies, the general public, and decision makers regarding potential environmental impacts related to the proposed Project:

1. Adoption and implementation of the Land Use Element Update
2. Adoption and implementation of the Safety Element Update

The purpose of an EIR, under provisions of CEQA, is "to identify the significant effects on the environment of the project, to identify the alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." (PRC Section 21002.1[a].) Each public agency is required to mitigate or avoid the significant effects on the environment of projects it approves or carries out whenever feasible. The environmental effects of a project that must be addressed include the significant effects of the project, growth-inducing effects of the project, and significant cumulative effects.

The purpose of an EIR is not to recommend either approval or denial of a project. Rather, CEQA requires decision-makers to balance the benefits of a project against its unavoidable environmental effects in deciding whether to carry out a project. The lead agency will consider the analysis in the Draft EIR, comments received on the Draft EIR, and responses to those comments before making a final decision. If significant environmental effects are identified, the lead agency must adopt "Findings" indicating whether feasible mitigation measures or alternatives exist that can avoid or reduce those effects. If environmental impacts are identified as significant and unavoidable after proposed mitigation, the lead agency may still approve the project if it determines that the social, economic, or other benefits outweigh the unavoidable impacts. The lead agency would then be required to prepare a "Statement of Overriding Considerations" that discusses the specific reasons for approving a project, based on information in the Draft EIR, comments received on the Draft EIR, and other information in the administrative record.

This Draft PEIR provides a first-tier analysis of the potential environmental effects of the proposed Project. Section 15152 of the CEQA Guidelines indicates that tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy, or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site specific EIR or negative declaration if additional analysis is necessary. Subsequent activities in accordance with the proposed Project examined in light of this Draft PEIR to determine

whether an additional environmental document must be prepared. If a subsequent project or later activity would have effects that were not examined in this Draft PEIR, or not examined at an appropriate level of detail to be used for the later activity, an initial study would need to be prepared to determine the appropriate environmental document. If the City finds that pursuant to Section 15152 of the CEQA Guidelines, no new effects could occur or new mitigation measures would be required on a subsequent project, the City can approve the activity as being within the scope of the Project covered by this Draft PEIR, and no new environmental document would be required. In addition, the standards related to subsequent EIRs at CEQA Guidelines Section 15162 to 15164 and PRC Section 21166 are applicable to this Draft PEIR.

The City will review subsequent projects for consistency with the Draft PEIR and prepare appropriate environmental documentation pursuant to CEQA provisions for Draft PEIRs and subsequent projects. Subsequent projects under the Draft PEIR may include, but are not necessarily limited to, the following implementation activities:

- Zoning Code updates
- Rezoning of properties
- Approval of Specific Plans
- Approval of development plans, including tentative maps, variances, conditional use permits, and other land use permits
- Approval of development agreements
- Approval of facility and service master plans and financing plans
- Approval and funding of public improvement projects
- Approval of resource management plans
- Issuance of permits and other approval necessary for implementation of the General Plan
- Acquisition of property by purchase
- Annexations into the City

To define the scope of the investigation of the Draft PEIR, the City distributed a Notice of Preparation (NOP) on February 8, 2023, to the State Clearinghouse, State agencies, Cities, and Humboldt County; other public agencies; and interested private organizations and individuals, in accordance with the requirements of the California Code of Regulations, Title 14, Sections 15082(a), 15103, and 15375. Pursuant to Section 15082 of the *CEQA Guidelines,* recipients of the NOP were requested to provide responses within 30 days after their receipt of the NOP. An initial study was not prepared with the NOP; *CEQA Guidelines* Section 15063(a) permits a lead agency to omit an initial study if it determines that an EIR is clearly required. The purpose of the NOP was to identify agency and public concerns regarding potential impacts of the proposed Project. Table 1-1 provides a list of the comment letters received during the NOP public comment period. The NOP comment letters are included in Appendix C.2 of the EIR.

Table 1-1: NOP Comments Received

Commentor	Issues Raised
California Department of Fish and Wildlife (CDFW)	Stream and wetland buffers; preventing new development in stream and wetland zones.
California Department of Fish and Wildlife (CDFW)	Cumulative impacts of increased stormwater runoff.
California Department of Fish and Wildlife (CDFW)	Use of low-impact development.

Commentor	Issues Raised
California Department of Fish and Wildlife (CDFW)	Cumulative impacts of increased groundwater extraction.
California Department of Fish and Wildlife (CDFW)	Impacts to fish and wildlife from any potential surface water diversion.
California Department of Fish and Wildlife (CDFW)	Limiting development in forested and agricultural lands.
California Department of Fish and Wildlife (CDFW)	Prohibiting development in 100-year floodplain areas.
California Department of Fish and Wildlife (CDFW)	Avoidance of invasive species in landscaping.
Native American Heritage Commission	AB 52 consultation requirements
Native American Heritage Commission	SB 18 consultation requirements

1.2 Legal Basis

In 1970, the California Legislature enacted the California Environmental Quality Act (CEQA). The statues that comprise CEQA are set forth in the California Public Resources Code, Section 21000 *et seq.* To assist in implementing these statutes, the State of California has issued regulations known as the State CEQA Guidelines. Under CEQA, all State and local agencies are required to consider the environmental impacts of any project they approve or propose to implement. The principal CEQA mechanism for consideration of the impacts that may have potentially significant environmental impacts is the EIR.

An EIR is primarily a public disclosure and information document with a number of specific objectives, including:

- To inform public agency decision makers and the public of the environmental effects of proposed activities;
- To assist public agency decision makers as they consider the environmental implications of their actions;
- To identify ways in which environmental damage can be avoided or significantly reduced;
- To reduce or prevent damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures; and
- To disclose to the public the reasons why a governmental agency approved a project if significant environmental effects are involved.

CEQA requires the preparation of an EIR prior to approving any "project" that may have a significant effect on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action that has a potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). The City of Ferndale has determined that implementation of the Draft Land Use and Safety Elements of the General Plan, along with proposed updates to the Zoning Code, constitutes a "project" within the definition of the CEQA. Typically, General Plan updates may have the potential for resulting in significant environmental effects. This PEIR was prepared to evaluate the extent to which the proposed revision of the City's General Plan has the potential for significant environmental impacts.

1.3 TYPE OF DOCUMENT AND INTENDED USE

In accordance with CEQA Guidelines Section 15146, the degree of specificity of this EIR corresponds with the degree of specificity involved in the underlying activity; i.e., adoption of updates to certain elements of the City of Ferndale's General Plan and Zoning Code along with related implementation. Since the proposed General Plan revision is "general" in nature and proposes few policies and actions that would have substantial physical changes in land use and related impacts greater than policies that are already in effect, this EIR is necessarily less detailed than an EIR would be for a site-specific construction project or similar activity. This EIR addresses environmental issues on a broader scale. In addition, the major policy emphasis of the proposed General Plan revisions is to reaffirm and reinforce the general intent of existing policies. Therefore, this EIR is intentionally direct and concise, as opposed to speculative and exhaustive.

An evaluation of the environmental impacts of a general plan revision is much different than an assessment of the potential impacts that may result from a proposed project that directly involves physical changes to land, as would be the case with a subdivision project or a use permit for a particular land use. As the name implies, a general plan consists of general policies concerning land use, public services and infrastructure, and resource management. Therefore, a general plan revision itself may not have specific environmental impacts. This factor is very much the case with the proposed updates to the City's General Plan and Zoning Code.

A second factor, in the case of a general plan revision, is that the City already has a general plan and zoning code in place. As is discussed in the "No Project" alternative, if the City does not revise its General Plan and zoning code at this time, it will still have these documents in place with all of the land use designations, goals and policies that are currently in effect.

Upon approval of the Project by the City and certification of this PEIR, additional CEQA compliance including negative declarations, mitigated negative declarations, or the preparation of project level EIRs may be required for development projects proposed within the City's jurisdiction.

1.4 SCOPE OF THE PEIR

In accordance with PRC Section 21002.1, the purpose of this PEIR is to address the potential environmental impacts resulting from implementation of the proposed Project, propose mitigation measures to reduce potentially significant environmental impacts, and identify and evaluate alternatives, which could reduce or avoid the significant effects of the proposed Project. While the Project components include "paper" projects, meaning that the Land Use Element and Safety Element updates are policy documents that do not have direct physical impacts to the land, most of the analysis in this PEIR will be addressing, when applicable, the foreseeable physical impacts of implementing the General Plan, as this document creates the blueprint of future development in the City. The other aspects of the Project are analyzed as appropriate within each issue area. The EIR process provides an opportunity for the public to review and comment upon the potential environmental impacts of the proposed Project.

The City Planning Commission will make a recommendation on the proposed Project to the City Council which is the decision-making body in the City with authority to take action on the Project. Both the Planning Commission and City Council will consider the information in this PEIR as part of their evaluation of the proposed Project. The findings and conclusions presented in the PEIR regarding environmental impacts do not control the City's discretion to approve, deny, or modify the Project, but instead are presented as information to aid the decision-making process.

As set forth in Section 15021 of the CEQA Guidelines, as lead agency, the City has the duty to avoid or minimize environmental damage where feasible. Furthermore, Section 15021(d) of the CEQA Guidelines states that, "CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors, and in particular the goal of providing a decent home and satisfying living environment for every Californian." In accordance with CEQA, the City will be required to make findings for each environmental impact of the proposed Project that cannot be mitigated to below a less than significant level. If the City determines that the benefits of the proposed Project outweigh unmitigated significant environmental effects, the City will be required to adopt a statement of overriding considerations stating the reasons supporting their action notwithstanding the proposed Project's significant environmental effects.

1.5 Environmental Review Process

The review and approval process for the PEIR and the Project will involve the following procedural steps:

Notice of Preparation (NOP): The NOP was completed and distributed to the State Clearinghouse on February 8, 2023 and assigned SCH Number 2023020217.

Notice of Completion (NOC): The City will file an NOC with the State Office of Planning and Research to begin the required public review period (per Public Resources code, Section 21161) concurrent with release of the document for the public review period.

Public Notice/Public Review: Concurrent with the NOC, the City will provide public notice of the availability of the PEIR for public review and invite comments from the general public, agencies, organizations, and other interested parties. The Draft PEIR will be circulated for 45 days, from August 26, 2024, to October 10, 2024. Document files will be made available for review upon request at Ferndale City Hall, 834 Main Street, Ferndale, CA and online at https://ci.ferndale.ca.us/documents/general-plan/. The Ferndale City Council and Planning Commission will hold a joint public meeting on September 4, 2024, at 5:00 p.m. The purpose of this public meeting is to receive public comments on the Draft PEIR. Comments may be submitted in writing via mail or email. Written comments on the Draft PEIR will be accepted through October 10, 2024, until 5:00 p.m. Public agencies, interested organizations, and individuals are encouraged to submit comments on the Draft PEIR for consideration by the City. Written comments may be submitted via email or mail, and commenters are requested to include their name and physical address in the body of the email or letter.

Mail comments to:
City of Ferndale Planner
City of Ferndale
P.O. Box 1095
Ferndale, CA 95536

Email comments to:
longrangeplan@ci.ferndale.ca.us

To facilitate understanding of the comments, please provide a separate sentence or paragraph for each comment and note the page and Chapter/Section of the Draft PEIR to which the comment is directed. This approach to commenting will help the City provide a clear and meaningful response to each comment.

Response to Comments/ FPEIR: At the end of the public review period, written responses will be prepared for all substantive comments received on the Draft PEIR during the circulation period. The comments and responses will

then be included in the Final PEIR and will be considered by the City Council prior to making a decision on the Project which is scheduled to occur in November or December 2024. The City will notice Planning Commission and City Council public hearings in accordance with the requirements of State law.

Project Consideration: Upon review and consideration of the complete PEIR, the City may act upon the Project. A decision to approve the Project would be accompanied by written findings in accordance with CEQA Guidelines Section 15091 (Findings) and, if applicable, Section 15093 (Statement of Overriding Considerations). The City would also adopt a monitoring and reporting program for any mitigation measures that have been incorporated into or imposed upon the Project to reduce or avoid significant effects on the environment.

Certification of the PEIR: If the City finds that the PEIR is "adequate and complete", the City may certify the PEIR. The rule of adequacy generally holds that he PEIR can be certified if: 1) it shows a good faith effort at full disclosure of environmental information, and 2) provides sufficient analysis to allow decisions to be made regarding the Project in contemplation of environmental considerations.

1.6 MITIGATION MONITORING

CEQA requires that, when a public agency makes findings based on an PEIR, that agency must adopt a reporting and monitoring plan for any included mitigation measures or make them a condition of the Project approval. Mitigation measures are actions taken in addition to adopted plans, polices, and codes that already regulate the Project. A reporting and monitoring plan, if needed, will be designed to ensure compliance during Project implementation and provide disclosure to the public to ensure that conditions are monitored and properly met (Public Resources Code Section 21081.6).

2.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

PROJECT DESCRIPTION

Chapter 3 describes the Land Use and Safety Element Updates, including the objectives, location and setting, background, overall concept and proposed activities, and anticipated permits and approvals.

STUDY AREA

The study area is used to describe the environmental setting and complete the impact analysis (i.e., the geographic scope of the analysis used to consider direct and indirect impacts). While the study area generally includes the City limits, some resource categories include a larger geographic scope as the study area for each environmental discipline has been established based upon its relevance to that discipline and may include adjacent unincorporated areas. For example, in Section 4.4 (Air Quality), the Project is located within the North Coast Unified Air Quality Management District, which regulates air quality at the regional level; therefore, the study area includes the City limits as well as the North Coast Air Basin. The rationale for study area selection is provided in the introductory text of each section, if different from the typical City limits boundary.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

This PEIR evaluates the potential for the Project to significantly affect the physical environment described in the setting for each respective resource category. Potential impacts are identified and characterized and, where feasible, mitigation measures are identified to avoid or reduce significant impacts to a less than significant level.

Significance thresholds for each environmental resource category are presented in each section of Chapter 4. The significance thresholds are based on the Appendix G of the 2023 CEQA Guidelines. For the impact analyses, the following categories are used to identify impact significance:

> **No Impact**. This determination is made if a resource is absent or if a resource exists within the study area but there is no potential that the Project could affect the resource.
>
> **Less than Significant Impact**. This determination applies if there is a potential for some limited impact on a resource but the impact is not significant under the significance threshold.
>
> **Less than Significant Impact after Mitigation Incorporated**. This determination applies if there is the potential for a substantial adverse effect in accordance with the significance threshold but mitigation is available to reduce the impact to a less-than-significant level.
>
> **Significant and Unavoidable Impact**. This determination applies to impacts that are significant, even after mitigation has been included to reduce the impact. Under this determination, no additional feasible mitigation is available to reduce the impact to a less-than-significant level.

Table 2-1 identifies, by resource category, the significant Project impacts, proposed mitigation measures, and post-mitigation significance. Additional information about the impacts and mitigation measures can be found in Chapter 4: Sections 2 through 21 of this DEIR, as referenced for each resource category.

Table 2-1: Summary of Impact and Mitigation Measures

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
4.2 Aesthetics			
Impact AES-01: Would the Project have a substantial adverse effect on a scenic vista?	Less than significant	No mitigation is necessary	Not applicable
Impact AES-02: Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No impact	No mitigation is necessary	Not applicable
Impact AES-03: Would the Project, in non-urbanized areas, substantially degrade existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	Less than significant	No mitigation is necessary	Not applicable
Impact AES-04: Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than significant	No mitigation is necessary	Not applicable
4.3 Agricultural and Forestry			
Impact AG-01: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Less than significant	No mitigation is necessary	Not applicable
Impact AG-02: Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact AG-03: Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No impact	No mitigation is necessary	Not applicable
Impact AG-04: Would the Project result in the loss of forest land or conversion of forest land to non-forest use?	Less than significant	No mitigation is necessary	Not applicable
Impact AG-05: Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	Less than significant	No mitigation is necessary	Not applicable
4.4 Air Quality			
Impact AQ-01: Would the Project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant	No mitigation is necessary	Not applicable
Impact AQ-02: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard?	Significant and unavoidable	**Mitigation Measure AQ-01: PM_{10}** Adopt the Ferndale General Plan Draft Air Quality Element and implement the policies contained therein. The Draft Air Quality Element policies with the greatest potential to mitigate PM_{10} emissions impacts include: Land Use • Promote incentives to minimize PM_{10} emissions from fireplaces and woodstoves such as the NCUAQMD's Woodsmoke Reduction Pilot Program. • Preserve established trees where possible. • Reduce energy use in City-owned assets. Transportation	Significant and unavoidable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		• Provide incentives for public, commercial and residential design that supports the charging of electric vehicles, or refueling of alternative fuel vehicles. • Modify the City procurement policy to specify high fuel efficiency for each vehicle class for City Government vehicles. Construction • Require adherence to NCUAQMD Best Management Practices to reduce emissions of dust and other sources of PM_{10} from construction activities.	
Impact AQ-03: Would the Project expose sensitive receptors to substantial pollutant concentrations?	Less than significant	No mitigation is necessary	Not applicable
Impact AQ-05: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant	No mitigation is necessary	Not applicable
4.5 Biological Resources			
Impact BIO-01: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Significant impact	**Mitigation Measure BIO-1: Revised Policies and Implementation Programs** Revise the biological resource protections for sensitive species and riparian habitat in Policy LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats and sensitive natural communities. Suggested revisions can be found in Section 4.5.	Less than significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact BIO-02: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Significant impact	**Mitigation Measure BIO-1: Revised Policies and Implementation Programs** Revise the biological resource protections for sensitive species and riparian habitat in Policy LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats and sensitive natural communities. Suggested revisions can be found in Section 4.5.	Less than significant
Impact BIO-03: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Significant impact	**Mitigation Measure BIO-1: Revised Policies and Implementation Programs** Revise the biological resource protections for sensitive species and riparian habitat in Policy LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats and sensitive natural communities. Suggested revisions can be found in Section 4.5. **Mitigation Measure BIO-2: New Policy – Wetland Delineation Requirement** Adds Policy LU-3.8 – Wetland Delineation Requirement which says "Any application for new development involving ground disturbance on a parcel where wetlands may be present according to the National Wetland Inventory or other site-specific evidence shall include a wetland reconnaissance and delineation report prepared by a qualified professional. The site plan shall show all proposed new development is located outside of any wetlands that exist on the subject property and appropriate wetland buffers based upon analyses and recommendations in the site-specific study. New development proposed within wetlands or wetland buffer areas shall require consultation and required regulatory approvals from the U.S. Army Corps of	Less than significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		Engineers (USACE), the North Coast Regional Water Quality Control Board (NCRWQCB), and/or California Department of Fish and Wildlife (CDFW)."	
Impact BIO-04: Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Significant impact	**Mitigation Measure BIO-1: Revised Policies and Implementation Programs** Revise the biological resource protections for sensitive species and riparian habitat in Policy LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats and sensitive natural communities. Suggested revisions can be found in Section 4.5. **Mitigation Measure BIO-2: New Policy – Wetland Delineation Requirement** Adds Policy LU-3.8 – Wetland Delineation Requirement which says "Any application for new development involving ground disturbance on a parcel where wetlands may be present according to the National Wetland Inventory or other site-specific evidence shall include a wetland reconnaissance and delineation report prepared by a qualified professional. The site plan shall show all proposed new development is located outside of any wetlands that exist on the subject property and appropriate wetland buffers based upon analyses and recommendations in the site-specific study. New development proposed within wetlands or wetland buffer areas shall require consultation and required regulatory approvals from the U.S. Army Corps of Engineers (USACE), the North Coast Regional Water Quality Control Board (NCRWQCB), and/or California Department of Fish and Wildlife (CDFW)."	Less than significant
Impact BIO-05: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact BIO-06: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Less than significant	No mitigation is necessary	Not applicable
4.6 Cultural Resources			
Impact CUL-01: Would the Project cause a substantial adverse change in the significance of an historical resource (pursuant to Section 15064.5)?	Less than significant	No mitigation is necessary	Not applicable
Impact CUL-02: Would the Project cause a substantial adverse change in the significance of an archaeological resource (pursuant to Section 15064.5)?	Less than significant	No mitigation is necessary	Not applicable
Impact CUL-03: Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?	Less than significant	No mitigation is necessary	Not applicable
4.7 Energy			
Impact EN-01: Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	Less than significant	No mitigation is necessary	Not applicable
Impact EN-02: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	No mitigation is necessary	Not applicable
4.8 Geology and Soils			

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact GEO-01: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) strong seismic ground shaking? iii) seismic-related ground failure (including liquefaction)? iv) landslides?	Less than significant	No mitigation is necessary	Not applicable
Impact GEO-02: Would the Project result in substantial soil erosion or the loss of topsoil?	Less than significant	No mitigation is necessary	Not applicable
Impact GEO-03: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less than significant	No mitigation is necessary	Not applicable
Impact GEO-04: Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No impact	No mitigation is necessary	Not applicable
Impact GEO-05: Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No impact	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact GEO-06: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No impact	No mitigation is necessary	Not applicable
4.9 Greenhouse Gas Emissions			
Impact GHG-01: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Significant and unavoidable	**Mitigation Measure GHG-1: Implement Safety Element Program 4.h** Safety Element Program 4.h commits the City to participating in the Regional Climate Action Plan development and implement the GHG reduction measures that are feasible and under the City's control.	Significant and unavoidable
Impact GHG-02: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Significant and unavoidable	**Mitigation Measure GHG-1: Implement Safety Element Program 4.h** Safety Element Program 4.h commits the City to participating in the Regional Climate Action Plan development and implement the GHG reduction measures that are feasible and under the City's control.	Significant and unavoidable
4.10 Hazards and Hazardous Materials			
Impact HAZ-01: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than significant	No mitigation is necessary	Not applicable
Impact HAZ-02: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less than significant	No mitigation is necessary	Not applicable
Impact HAZ-03: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact HAZ-04: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No impact	No mitigation is necessary	Not applicable
Impact HAZ-05: For a Project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	No impact	No mitigation is necessary	Not applicable
Impact HAZ-06: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No impact	No mitigation is necessary	Not applicable
Impact HAZ-07: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less than significant	No mitigation is necessary	Not applicable
4.11 Hydrology and Water Quality			
Impact HYD-01: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less than significant	No mitigation is necessary	Not applicable
Impact HYD-02: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	Less than significant	No mitigation is necessary	Not applicable
Impact HYD-03: Would the Project substantially alter the existing drainage pattern of the site or	Significant impact	**Mitigation Measure HYD-01: Add the following *italicized* text to Land Use Element Policy LU-3.2**	Less than significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces in a manner which would: i) result in a substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows?		Policy LU-3.2 – Improve Drainage: Incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding. *The quality of runoff from urban and suburban development shall be improved through use of appropriate and feasible Best Management Practices (BMPs) including, but not limited to, bioretention basins, artificial wetlands, grassy swales, oil/grit separators, with an emphasis on a Low Impact Development approach to stormwater management.* *a) New development shall be required to minimize increases in stormwater peak flows and/or volume, to the extent feasible.* *b) New development projects shall be designed to minimize drainage concentrations, maximize permeable surfaces, and maintain, to the extent feasible, natural site drainage conditions.*	
Impact HYD-04: In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to Project inundation?	Less than significant	No mitigation is necessary	Not applicable
Impact HYD-05: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than significant	No mitigation is necessary	Not applicable
4.12 Land Use and Planning			
Impact LU-01: Would the Project physically divide an established community?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact LU-02: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less than significant	No mitigation is necessary	Not applicable
4.13 Mineral Resources			
Impact MIN-01: Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No impact	No mitigation is necessary	Not applicable
Impact MIN-02: Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No impact	No mitigation is necessary	Not applicable
4.14 Noise			
Impact NOI-01: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less than significant	No mitigation is necessary	Not applicable
Impact NOI-02: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact NOI-03: For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	No impact	No mitigation is necessary	Not applicable
4.15 Population and Housing			
Impact POP-01: Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Less than significant	No mitigation is necessary	Not applicable
Impact POP-02: Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Less than significant	No mitigation is necessary	Not applicable
4.16 Public Services			
Impact PS-01: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection facilities?	Less than significant	No mitigation is necessary	Not applicable
Impact PS-02: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection facilities?			
Impact PS-03: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school facilities?	Less than significant	No mitigation is necessary	Not applicable
Impact PS-04: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?	Addressed in Section 4.17; Less than significant	Addressed in Section 4.17; No mitigation is necessary	Addressed in Section 4.17; Not applicable
Impact PS-05: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?	Less than significant	No mitigation is necessary	Not applicable
4.17 Recreation			
Impact REC-01: Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact REC-02: Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Less than significant	No mitigation is necessary	Not applicable
4.18 Transportation and Circulation			
Impact TRAN-01: Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	Less than significant	No mitigation is necessary	Not applicable
Impact TRAN-02: Would the Project conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b)?	Significant and unavoidable	**Mitigation Measure TRANS-01:** The City shall work with HCAOG to incorporate findings and recommendations of the ongoing Multimodal and Vibrant Neighborhood Planning Project, or other similar HCAOG planning efforts, to develop and implement policies and programs to be included in the City General Plan, or other appropriate plans, and projects related to the City's transportation system to reduce automobile dependency for local trips which may include but are not limited to funding pedestrian, bicycle, or public transit infrastructure projects; the acquisition of transit vehicles and other related equipment; or regional car and bike sharing services.	Significant and unavoidable
Impact TRAN-03: Would the Project substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	Less than significant	No mitigation is necessary	Not applicable
Impact TRAN-04: Would the Project result in inadequate emergency access?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
4.19 Tribal Cultural Resources			
Impact TCR-01: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less than significant	No mitigation is necessary	Not applicable
4.20 Utilities and Service Systems			
Impact UTL-01: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less than significant	No mitigation is necessary	Not applicable
Impact UTL-02: Would the Project have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact UTL-03: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	Less than significant	No mitigation is necessary	Not applicable
Impact UTL-04: Would the Project generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less than significant	No mitigation is necessary	Not applicable
Impact UTL-05: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than significant	No mitigation is necessary	Not applicable
4.21 Wildfire			
Impact WF-01: Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than significant	No mitigation is necessary	Not applicable
Impact WF-02: Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than significant	No mitigation is necessary	Not applicable
Impact WF-03: Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than significant	No mitigation is necessary	Not applicable

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact WF-04: Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than significant	No mitigation is necessary	Not applicable

3.0 PROJECT DESCRIPTION

A "Project," as defined by the California Environmental Quality Act (CEQA) Guidelines, means "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following: (1)…enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100–65700" (14 Cal. Code of Reg. 15378[a]).

The proposed Project updates and amends two Elements of the City's existing General Plan - the Land Use and Safety Elements. For the Land Use Element, the Project will update the description of land uses, the map showing where the land uses occur, and the goals, policies, and implementation programs that articulate the vision for the City's long-term physical and economic development, while preserving open space areas to enhance the quality of life for residents. The Land Use Element also serves as the City's consolidated Open Space and Conservation Elements. The proposed updates are intended to achieve all the following objectives:

- Satisfy new State mandates for General Plans that have been issued since the General Plan was last updated.
- Encourage infill development to preserve agricultural lands and open space around the City.
- Establish a stream protection zone along Francis Creek to maintain its riparian habitat values and prevent soil erosion.
- Adjust to climate change and promote sustainability.
- Resolve inconsistencies between existing land uses and the General Plan.
- Resolve inconsistencies between the General Plan and other City plans that have been revised in recent years.
- Targeted increases in land use density and increases in the allowable uses and development standards to provide adequate housing sites, promote fair and equal housing opportunities, and resolve inconsistencies with the City's adopted 2019 Housing Element.
- Remove governmental constraints to housing investment.

The Safety Element will continue to identify potential risks to persons and property resulting from fires, floods, earthquakes, landslides, and other hazards. It is intended to provide an overview of potential hazards in the area and provide policies to help improve City infrastructure to be more resilient against hazards. The proposed Safety Element Update includes new State-mandated safety considerations for climate change and emergency evacuation routes to comply with California Government Code (CGC) Section 65302(g). The Safety Element Update includes relevant policy guidance, hazard analysis, and the action plan from the City's 2020 hazard mitigation plan.

The Land Use and Safety Element updates have been prepared in accordance with State planning law, as provided in California Government Code Section 65300. According to these statutes, the General Plan is meant to be a long-term framework for guiding planning and development in the City for the next 20 years or more. It can be thought of as a blueprint for the City's growth and development. The elements of the General Plan are comprehensive both in their geography and subject matter. They address all the areas within the City's incorporated boundaries and the broad spectrum of issues associated with the future buildout of the City.

The Project Area considered by this EIR includes the entire City of Ferndale and the adjacent areas within approximately a half mile of the City's boundary. This is referred to as the "Planning Area".

3.1 PROJECT OBJECTIVES

Every city and county in California are required to adopt and periodically update a comprehensive, long-range general plan that outlines goals and policies for the physical development of the community (California Government Code Section 65300). In addition to the objectives of the proposed Land Use and Safety Elements listed above, the Project's objectives also include meeting the following statutory objectives for general plans:

- Identify the community's land use, circulation, and environmental goals and policies as they relate to land use and development.
- Provide a basis for local government decision-making, including decisions on development approvals.
- Provide residents with opportunities to participate in planning and decision-making processes in their community.
- Inform residents, developers and decision-makers of the ground rules that guide development within the community.

According to California Government Code Section 65302, General Plans are required to cover the following elements or topics: land use, circulation, housing, conservation, open space, noise, safety, and for communities with Disadvantaged Communities, an environmental justice element[1]. Jurisdictions may include any other topic that is relevant to planning its future. The Project includes updates to the Land Use and Safety Elements only. The City has an adopted Housing Element (2019-2027), Historical and Cultural Resources Element (2012), Transportation (Circulation) and Public Facilities Element (1967), and a Noise Element (1975). A draft Noise Element update was prepared in 2016 that also included policies related to protection of Air Quality, but it was never adopted.

The revision of the City's Land Use and Safety Elements is intended to apply to a period extending for approximately 20 years. Since the community will change and evolve over time, the General Plan and its individual elements will need to periodically evolve as well.

3.2 REGIONAL SETTING

The City of Ferndale is an incorporated community located on the north coast of California in Humboldt County at latitude 40.578654 and longitude -124.261656 which is approximately 230 miles north of San Francisco, California and 140 miles southwest of Medford, Oregon. The City is situated on the southern edge of the Eel River flood plain approximately 4 miles from the Pacific Coastline and 15 miles from Eureka, California. The floodplain is approximately 4.5 miles wide near Ferndale and expands to approximately 9 miles wide where the river meets the coastline. This area is regularly subjected to flooding which creates rich fertile soil that is utilized for various agricultural purposes including cattle grazing. The area surrounding the City is primarily coastal agricultural grazing land with flat lowlands around the City to the north and the Wildcat Hills adjacent to the City in the south.

Primary access to the City is by State Highway 211 from Fernbridge which is adjacent to US Highway 101 approximately 4 miles to the northeast. Additional access roads include Grizzly Bluff Road to the east, Mattole Road to the south, and Centerville Road to the west. The City of Fortuna (2023 population estimate: 12,480) is located 5 miles east and the City of Rio Dell (2023 population estimate: 3,370) is located 8 miles southeast of Ferndale. Fortuna is the closest City that offers a full range of services including Providence Redwood Memorial Hospital and other medical facilities.

[1] Since Ferndale does not have mapped Disadvantaged Communities, an Environmental Justice Element is not required.

3.3 General Characteristics of the Planning Area

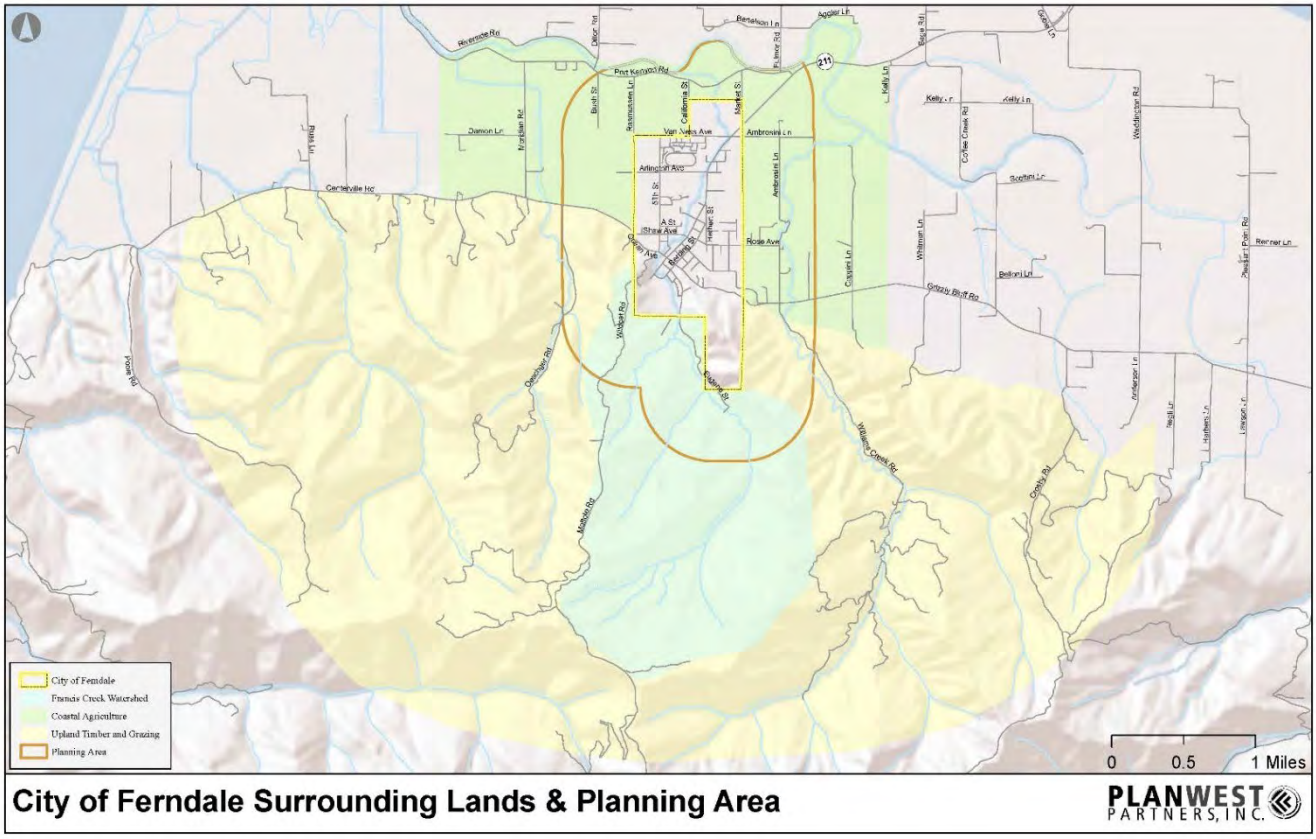
The City of Ferndale has an existing population of 1,398 within an area of approximately one square mile according to the 2020 US Census data. Approximately 44 percent of the population is 60 years old or more. The City's population has been relatively stable over the last few decades with little to no growth. Based on estimates from the California Department of Finance and Humboldt County, it is likely that this trend will continue into the future with limited growth over the next 10 years. The estimated 2021 Median Household Income was $62,500 with the largest percentage of households (29.1 percent) reporting a household income of $50,000 to $75,000 (2021 American Community Survey).

The City of Ferndale has strong agricultural ties due to its location within the fertile flood plain of the Eel River. Historically known for its dairies, there are still many grazing pastures surrounding the City and businesses within the City limits offer agricultural support services such as tractor sales and maintenance, feed, and others. Limited agriculture takes place within the City and is mostly comprised of orchards, feed crops, and animal husbandry on individual lots. The City is also noted for its preserved historical architecture including Victorian and American Craftsman. Ferndale is known as the Victorian Village and its "Main Street" Historic District was placed on the National Register of Historical Places in 1994.

Planning Area

The planning area as defined in the draft Land Use Element Update includes the area within the City limits and the areas within approximately a half mile of the City's boundary. This includes portions of the adjacent Francis Creek watershed, coastal agriculture lands, and upland timber and grazing areas as shown in Figure 3-1 and discussed in further detail below.

Figure 3-1: Ferndale City Limits and Planning Area



City of Ferndale – The area within the City's limits is under the direct jurisdiction of the City and is subject to the goals, policies, and programs contained within the General Plan including the current Land Use and Safety Element updates. This area is the primary focus of the current environmental review.



Francis Creek Watershed – The Francis Creek Watershed includes a portion of the City and surrounding land upstream into forested areas to the south. Francis Creek generally flows south to north through the City and divides the area into eastern and western drainage areas. The creek flows to its confluence with the Salt River, which is a tributary to the Eel River near the mouth on the coastline. Francis Creek is a perennial stream with a small watershed, and stream flow quickly subsides after moderate rain events. Flooding events can occur periodically during large storm events. New policies in the Land Use Element seek to protect the biological resources of the creek as it flows through the City.

Coastal Agriculture – The Eel River valley and flood plain has large areas of fertile land well suited for agriculture. Much of the area surrounding Ferndale is coastal agricultural land and contributes to the economic well-being of the region. Community members have also expressed their desire to maintain and protect agriculture as it is a defining regional characteristic which is captured in a new policy in the Land Use Element. Because much of this land is outside the jurisdiction of the City, the Land Use Element includes policies directing the City to continue to work with the County and Coastal Commission on programs that encourage preservation of these lands to help reduce potential impacts from development.

Upland Timber and Grazing – To the south of Ferndale are hills and valleys including the Francis, Reas, and Williams Creek watersheds. These areas were historically used for upland grazing of cattle and timber production which can be found both outside and inside the City limits. Areas outside of the City boundary can directly impact areas within the City along ecological corridors. Conversion of these lands to residential or other uses may potentially increase runoff and sediment into the watersheds that could impact the City by causing exacerbated erosion along the Francis Creek corridor. Policies in the Land Use Element direct the City to continue to work with the County on programs that encourage preservation of these lands to help reduce potential impacts from development.

CITY OF FERNDALE EXISTING AND PROPOSED LAND USE PATTERN

Land use designations define the range of allowable land uses within the City and the current 1986 Land Use Element of the General Plan specifies ten primary land use designations and six combining designations. Table 3-1 shows the distribution of existing and proposed land use designations applied to land within the City and Figure 3-2 shows where they are applied[2].

Table 3-1: Acreage of Existing and Proposed Land Use Designations

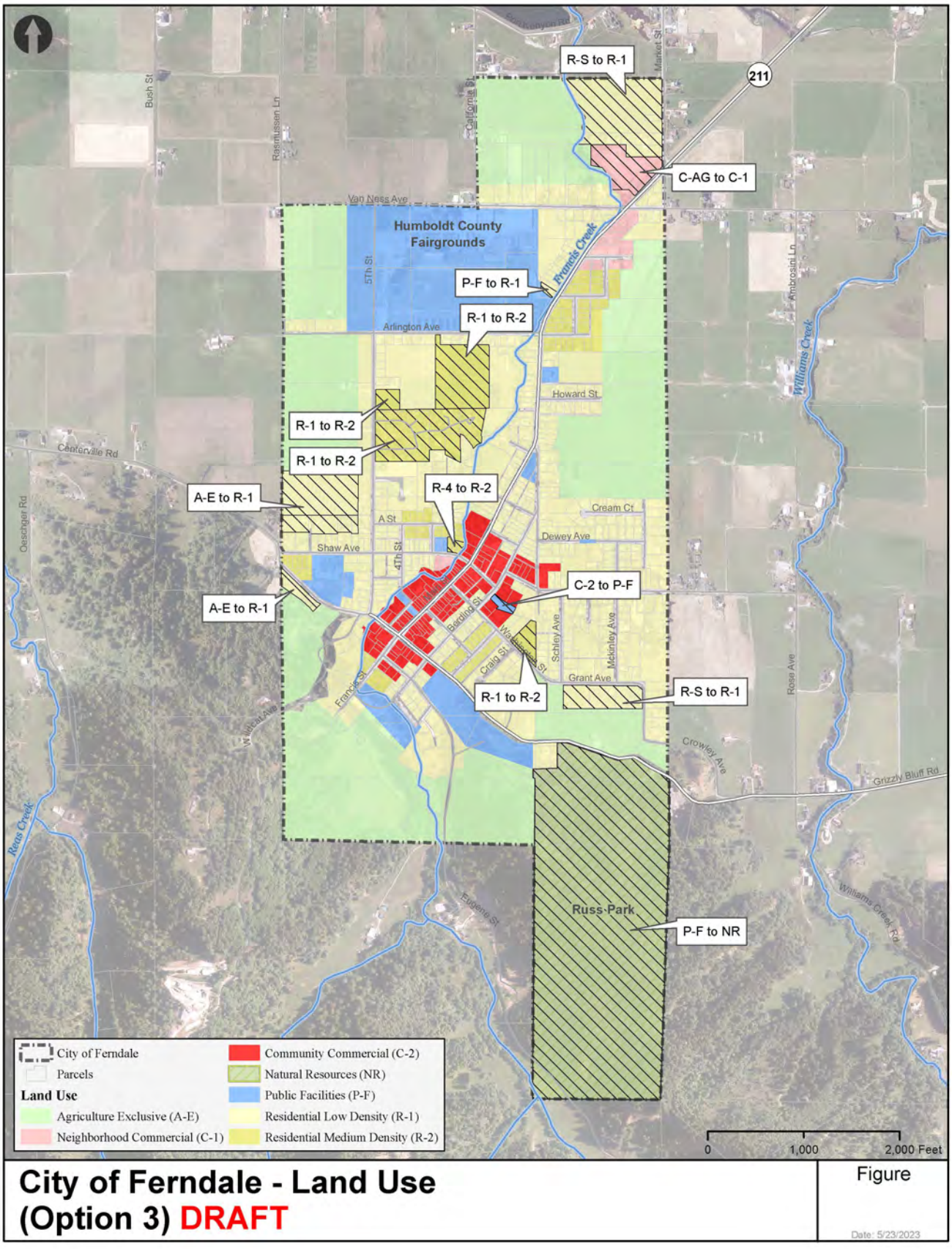
Land Use/ Zoning Designation	Abbreviation	Existing Acreage	% of Total	Proposed Acreage	% of Total
Agricultural Exclusive	AE	219	31.3	206	29.4
Neighborhood Commercial	C1	5	0.7	10	1.5
Community Commercial	C2	23	3.3	22	3.2
Agricultural Commercial	C-AG	5	0.8	0	0
Natural Resource	NR	0	0	112	16.1
Public Facility	PF	194	27.7	82	11.6
Residential Low Density	R-1	215	30.8	224	32.1
Residential Medium Density	R-2	18	2.5	42	6
Residential High Density*	R-3	0	0	0	0
Apartment Professional	R-4	0.5	0.1	0	0
Residential Suburban	R-S	19	2.8	0	0
Total		**698**	**100%**	**698**	**100%**

* The Residential High Density (R3) designation is not currently applied to any parcels in the City but could be used in the future to encourage multifamily housing.

The Residential One Family, Agricultural Exclusive, and Public Facility designations take up the most area in the City surrounding a densely developed commercial core. This highlights its history as a small, rural, agriculture-based community with low density residential development supported by a commercial center meeting day-to-day shopping and service needs of the City and surrounding areas. The commercial centers are focused along Main Street in the historic district and the area where the former Golden State Creamery building is located at the northern end of Ferndale.

[2] The abbreviations for the land use designations are the same as the abbreviations used for the zoning districts in the Zoning Ordinance and they share the same boundaries, so they are shown together in Figure 3-2.

Figure 3-2: Proposed Ferndale Land Use/Zoning Map



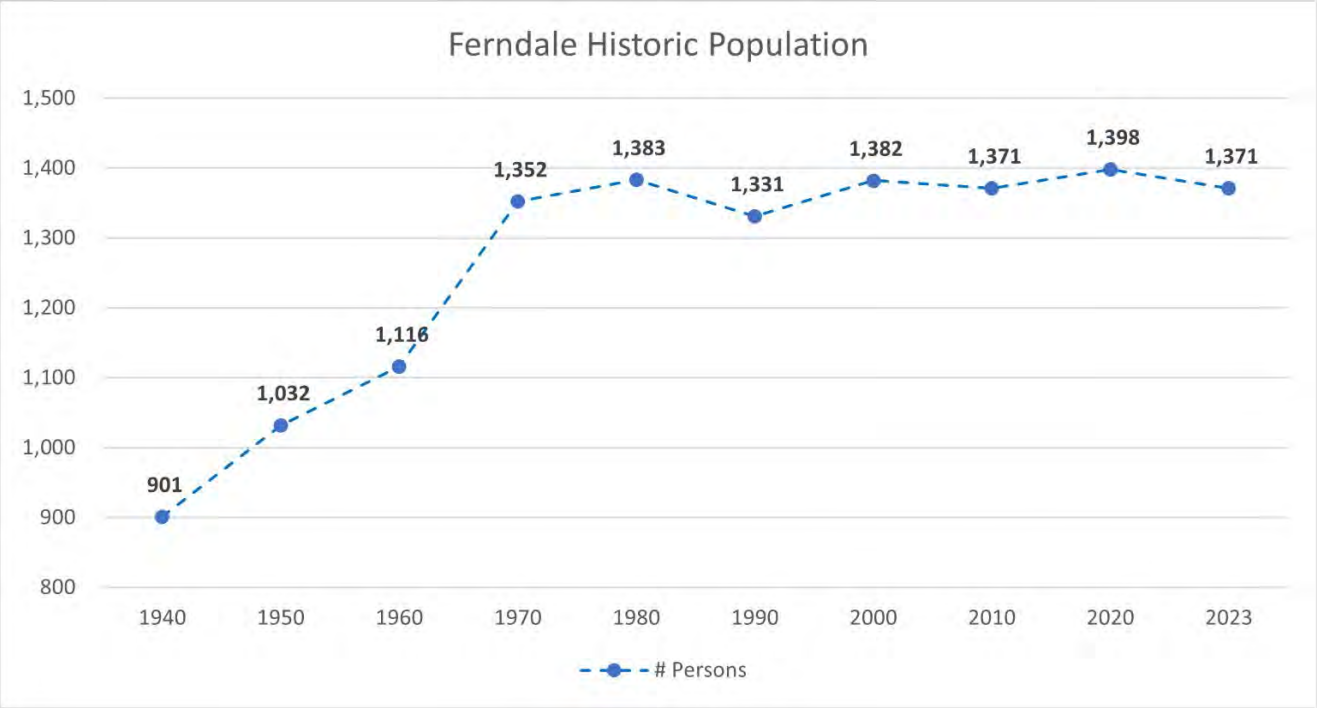
3.4 GENERAL ASSUMPTIONS

POPULATION

Past and Current. According to the 2023 Department of Finance Estimate, the total population of the City of Ferndale was 1,371 which is no different than the population for the City from the 2010 Census. The City's population has been remarkably stable since 1970 as shown in Figure 3-3 below. Periods of modest growth have been followed by periods of modest decline and generally shows a slight increase in population of about 0.03 percent per year.

While the City population has remained consistent over the past few decades, the demographics have been changing somewhat. For example, the percentage of people over the age of 65 increased steadily over the past two decades from approximately 16 percent in 2000 to 29 percent in 2020. And there are fewer persons per household in 2020 (2.17 persons) compared to 30 years ago (2.24 persons).

Figure 3-3: Ferndale Historic Population Growth 1940-2023



Source: US Census 1940 – 2020, California Department of Finance, Table 1: E-5 County/State Population and Housing Estimates, 1/1/2023 (2023 data)

Projections. Official population growth projections are prepared for counties but not cities in California. General factors that will affect future population growth include demographics (age and household size), economics (wealth and income of households and local and area-wide employment opportunities), environment (e.g., regional and environmental or social conditions which could lead to migration to northern California and losses and recovery from disaster, such as from wildfire), and wildcard factors like the COVID-19 global pandemic and possible rapid growth of an offshore wind industry.

For the purposes of this analysis, low-, medium-, and high-growth scenarios are used to frame the discussion in planning for the next twenty or more years. The low-growth rate scenario uses a 0.03 percent per year annual average population growth rate (AAGR), which approximates the City's population growth over the last 50 years. Under the low-growth scenario the population of Ferndale would increase by nine persons between 2023 and 2045 climbing from 1,371 persons in 2023 to 1,380 persons by 2045 as shown in Table 3-2 and Figure 3-4 below.

Under this scenario the demand for new housing construction would be very low - only five new homes would need to be constructed during the planning period to accommodate the population growth.

The high-growth scenario on the other hand uses a 0.5 percent AAGR, and under this scenario the City's population would increase by 157 persons during planning period, reaching 1,528 persons in 2045. The demand for housing would also be relatively high - 85 new homes would need to be constructed by 2045 to accommodate the population growth. This figure exceeds recent growth rates but reflects the future housing needs anticipated in the 2019 regional housing needs plan prepared by the Humboldt County Association of Governments. And it is considerably lower than the growth rate Ferndale experienced between 1940 and 1970.

The medium-growth scenario describes a midpoint between the high- and low-growth scenarios and uses a 0.25 percent AAGR. It anticipates 78 more persons and 41 new homes in Ferndale by 2045 as shown below.

Table 3-2: Ferndale Current and Projected Future Population and Housing Growth 2023 - 2045

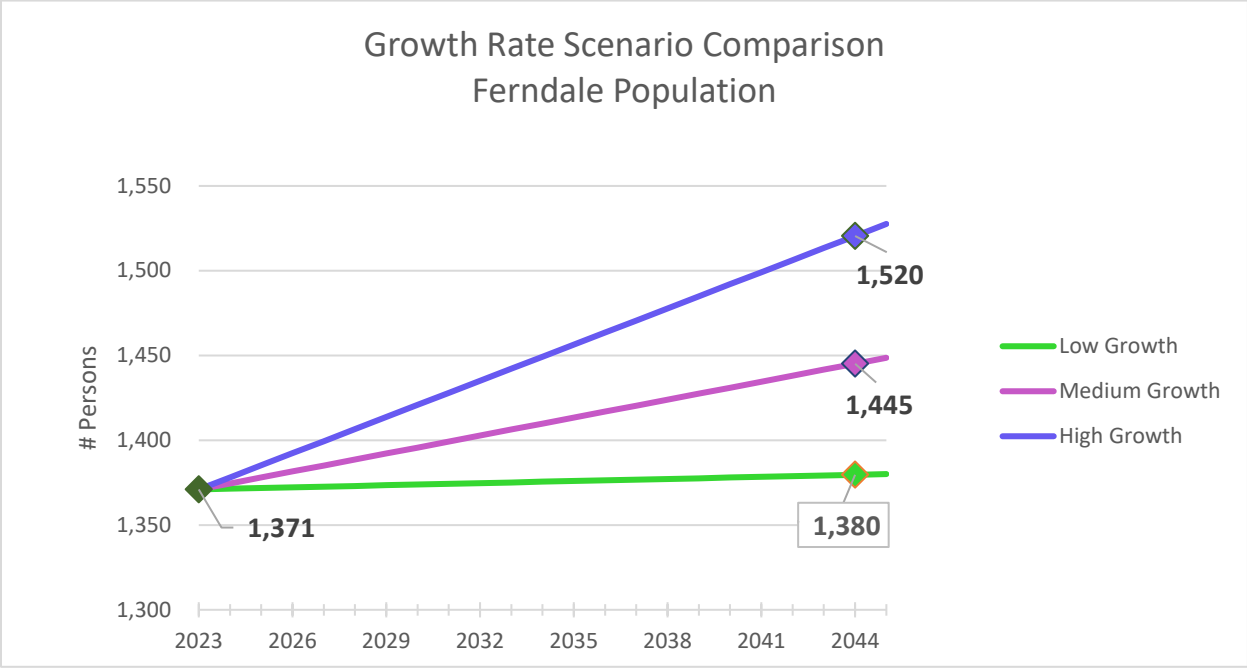
Growth Scenarios	Average Annual Growth Rate	Current Estimate		Future Year Projections			
		2023		2035		2045	
		Population	Housing	Population	Housing	Population	Housing
Current	n/a	1,371	732	n/a	n/a	n/a	n/a
Low Growth	0.03 %	n/a	n/a	1,376	735	1,380	737
Medium Growth	0.25 %	n/a	n/a	1,413	755	1,449	773
High Growth	0.50 %	n/a	n/a	1,456	779	1,528	817

Source: California Department of Finance, Table 1: E-5 County/State Population and Housing Estimates, 1/1/2023 (2023 data); Planwest Partners, 2023 (2035 and 2045 projections).

The analysis in this EIR focuses on the impacts of the high-growth scenario because it has the greatest potential for causing environmental impacts. New development encouraged by the Land Use and Safety Element Updates could result in construction of new structures, roadways, parking areas, and supporting infrastructure which impact the environment in a number of ways, and more development would occur under the high-growth scenario compared to the other scenarios, so it would have the greatest potential impacts on the environment. The environmental impacts associated with the other growth scenarios are anticipated to be the same or less than the impacts of the high-growth scenario.

Since the current General Plan already allows more housing development than needed to meet projected demand under all the growth scenarios, the evaluation of environmental impacts in this EIR focuses on changes in the type of development allowed. For instance, proposed Land Use Element changes on several properties will switch the Land Use designation from R-1 Low Density to R-2 Medium Density. This would allow duplexes or triplexes to be built where before only single-family homes would be allowed. These changes are expected to result in a more compact form of development because housing is allowed to be developed at higher densities.

Figure 3-4: Ferndale Current and Estimated Future Population Growth 2023-2045



Source: California Department of Finance, Table 1: E-5 County/State Population and Housing Estimates, 1/1/2023 (2023 data); Planwest Partners, 2023 (2035 and 2045 projections).

General Plan Buildout Projections. The environmental analysis in this Draft EIR addresses the 'buildout' at the end of the planning period at year 2045. Two types of potential buildout are the theoretical buildout, which assumes maximum buildout of each parcel within the City limits, and the projected General Plan 2045 buildout, which is based on the anticipated growth and development demand over the planning period.

The theoretical buildout would be if each and every parcel within the City is fully developed to the maximum allowable use within the planning period, which is by 2045. This theoretical buildout scenario would result in construction and operation of a substantial number of new residential dwelling units as well as a substantial increase in non-residential land facilities. However, this growth scenario is highly unlikely to occur within the General Plan's planning period given the historical and anticipated growth rates of the City, and the anticipated development demand over the life of this Land Use Element.

This Draft EIR evaluates the projected development that could occur with implementation of the General Plan through 2045. The projected development is informed by the City's historic and forecasted housing needs and anticipated development demands. This approach is consistent with CEQA requirements that an EIR evaluate 'reasonably foreseeable' direct and indirect physical changes in the environment that may be caused by the Project. Changes to the environment that are speculative or unlikely to occur are not considered 'reasonably foreseeable'.

EMPLOYMENT AND THE ECONOMY

There is limited employment data available for the City of Ferndale. The best available data sources include the US Census Bureau and the California Development Department which were summarized in the City's 2019 Housing Element. Table 1.10 of the Housing Element Appendix (included below as Table 3-3) provides a breakdown of employment by occupation. Based on this information, the largest occupation sectors are Management/Professional (27.7 percent) and Sales/Office (27.7 percent) with Service (23.0 percent) as the next largest.

Table 3-3: Number of Employees by Occupation

Occupation	Ferndale (in # and %)		Arcata	Fortuna	Eureka	Humboldt County	Mean Wage 2017
Management/Professional	179	27.7%	37.9%	28.1%	29.4%	33.9%	$85,124
Service	149	23.0%	26.9%	19.3%	23.5%	23.1%	$28,031
Sales/Office	179	27.7%	23.5%	30.8%	27.1%	23.6%	$31,530
Natural Resources, Construction, Maintenance	98	15.1%	5.8%	8.6%	10.2%	10.3%	$45,397
Production, Transportation, Material Moving	42	6.5%	5.8%	13.2%	9.8%	9.1%	$38,047
Total	647	100.0%	100.0%	100.0%	100.0%	100.0%	

Sources: American Community Survey, 2013-2017 5-year estimates; and California Employment Development Department, Occupational Employment Statistics, First Quarter 2017. (Taken from the adopted 2019 Housing Element Update)

More current data available from the 2021 American Community Survey indicates that in 2021 there were approximately 542 employed individuals in Ferndale over the age of 16. The largest occupation category is Management/ Professional (40.6 percent) with the next largest shown as Service (24.9 percent) (US Census Bureau 2021). Based on this information there has been a decline in employed individuals of almost -16 percent over a six-year time period. It should be noted that the American Community Survey estimates have a large margin of error and do not necessarily indicate what jobs are held within with City limits.

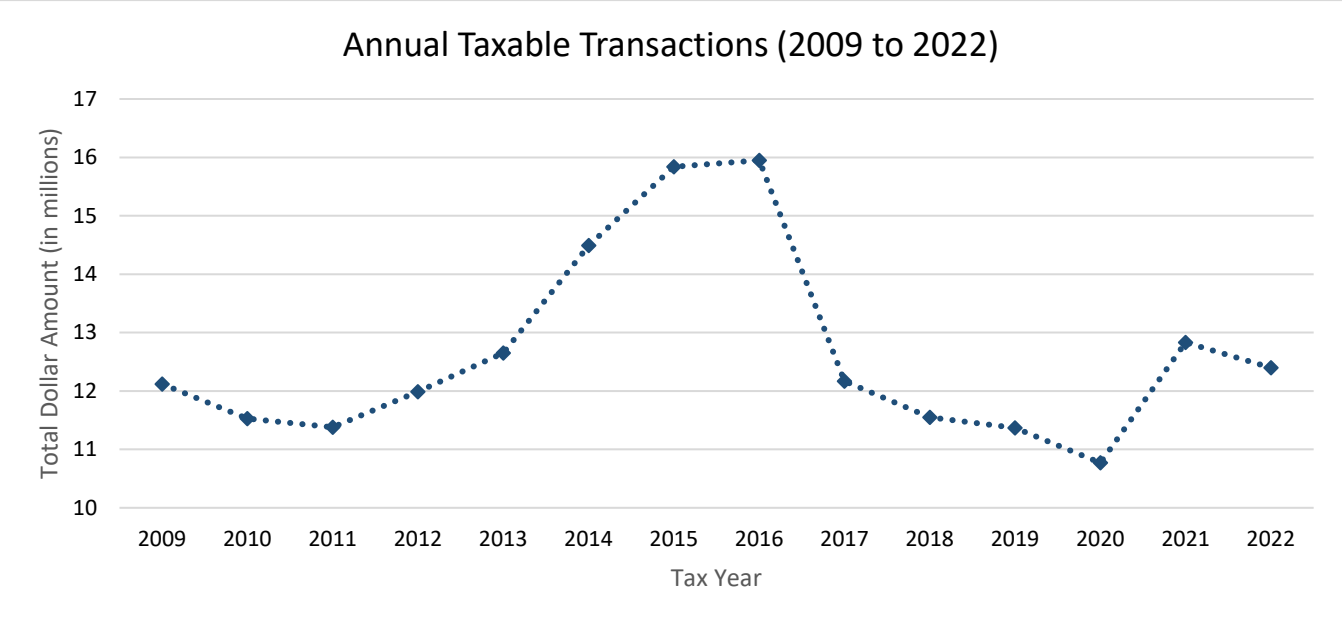
The Employment Development Department, Labor Market Information Division (LMID) prepares Industry Employment Projections (current projection period is 2018 to 2028) for counties in California. LMID aggregates Humboldt County as part of the North Coast Region together with Del Norte, Mendocino, and Lake Counties. These projections suggest that total employment will increase by four percent from 108,860 to 116,620 within the region during the projection period and that Healthcare Support, Food Preparation and Serving, and Transportation and Material Moving occupations will drive these employment gains.

Caltrans also prepares county-level economic forecasts for transportation planning purposes. The 2022 forecast for Humboldt County projects increases in government, leisure services, healthcare, and retail employment and a reduction of construction employment between 2022 to 2050. Overall employment in Humboldt County is projected by Caltrans to increase by 1,500 jobs in the coming years from 50,500 in 2022 to a high of 52,000 in 2029, an increase of three percent. The number of jobs is then projected to remain at 52,000 until 2050, the end of the time period for the projections. This EIR assumes that Ferndale's employment trends will generally mirror those of the overall county into the future – a moderate increase in employment up to 2029 and holding at that level for the duration of the planning period.

The California Department of Tax and Fee Administration provides taxable transaction datasets for cities and counties in the state. Figure 3-5 shows taxable transactions, or sales, within the City of Ferndale between 2009

and 2022. There has been a noticeable decline in taxable transactions since 2016. Industries that showed decline include Building and Garden Supply, and Clothing and Accessories. Restaurants and Bars showed a steep decline during the Covid-19 pandemic from $34.9 million in 2019 to $23.6 million in 2020. However, the industry has rebounded and is increasing past pre-pandemic levels. All Other Retail has shown a dramatic increase since 2020 and may be attributed to smaller cottage industries.

Figure 3-5: City of Ferndale Total Taxable Transactions



Source: California Department of Tax and Fee Administration

HOUSING

The Land Use Element Update is consistent with the policy direction of the 2019 Housing Element of the General Plan which has several major themes described below.

- New housing will be constructed within the existing City limits and will not be the result of annexations to the City. It is the desire of the community to protect the existing agricultural land that surrounds the City as a greenbelt.
- Physical infrastructure, including the wastewater treatment plant, water and sewer lines, water storage infrastructure, roads, and infrastructure associated with public services (e.g., police, fire protection, medical) will need to be repaired, updated, and replaced to meet existing population needs and expected growth demands.
- Due to the aging population of the City, smaller lot sizes and housing types are anticipated to be more desirable for ease of maintenance, more affordable housing prices and lower utility/upkeep cost.

3.5 FEATURES OF THE LAND USE AND SAFETY ELEMENT UPDATES

LAND USE ELEMENT UPDATE

Reflecting the community's vision, the Land Use Element update will guide the location and distribution of land uses in the City over the next 20 to 30 years. The Land Use Element update includes revised land use descriptions, an updated land use map, goals, policies, and implementation programs and is a major component of the Project evaluated in this EIR.

The updated Land Use Element will continue to direct the general location and extent of the uses of land for housing, business, industry, open space, agriculture, natural resources, public buildings and grounds, and other categories of public and private uses of land within the City. As the Land Use Element was last updated in 1986, the data, analyses, and policies in the Element will be updated to reflect the current conditions and vision of the City.

The Land Use Element will continue using infill principles to accommodate projections of population and economic growth. The City's anticipated growth during the planning period is expected be contained within the present City boundary and concentrated largely within already developed residential areas and planned development areas as described in the Element and shown on the Land Use Map.

Consistent with the 2019 Housing Element, a new policy direction of the proposed Land Use Element update is to provide more flexibility in housing options while still protecting the historic character of the area. Targeted increases in land use density and more allowable uses are all included in the updated Land Use Element consistent with the policies and programs set forth in the City's 2019 Housing Element, and to prepare for anticipated growth into the future.

To maintain consistency with the updated Land Use Element, the City's zoning ordinance will also need to be updated. For example, changes to the zoning districts are needed to accommodate new allowed uses, increased densities and the smaller lot sizes included in the updated Land Use Element.

LAND USE DESCRIPTIONS

The following paragraphs describe the updated land use designations in the Land Use Element. These are used in combination with the Land Use Map to locate and distribute new development in the City. The abbreviations and types of uses of the land use designations enumerated below will match the abbreviations and types of uses described in the zoning districts of the Zoning Ordinance (once updated).

Residential (R1, R2, R3)

Residential land use designations within the City allow dwelling units as their primary use, range from low to high density, and are intended to allow a broad range of housing types, sizes, and tenure. Limited public/quasi-public and commercial uses compatible with a residential setting may be allowed as provided by the zoning code. Historically, primary residential development in the City has been low density single-family homes. Moving forward, the City intends to support a broader range of housing types to increase affordability and provide diverse housing options for all income levels.

Residential Low Density (R1)

The Residential Low Density designation accommodates primarily detached residential units on individual lots with private yards. One accessory dwelling unit per lot is a primary and compatible use.

Density: One primary unit and one accessory dwelling unit per lot up to a maximum of 9 primary dwelling units per acre.

Impacts of proposed modifications: The proposed modifications clarify the existing land use designation by listing a set of allowed uses rather than referencing the uses permitted by the R-1 Zone. The proposed land uses are consistent with the uses currently allowed by the Zoning Ordinance so this change in the list of permitted uses does not have any potential environmental impacts. The maximum allowed development potential increases from seven dwelling units per acre currently to nine dwelling units per acre in the proposed new designation.

Residential Medium Density (R2)

The Residential Medium Density designation is applied in areas where more density can be accommodated. This can include side-by-side or stacked units, multiple units on a lot, or other unit types that meet the defined density including attached residential units, small-lot subdivisions, duplexes, triplexes, townhouses with private open space, and cohesive multi-unit/ multi-story structures with common open spaces. Single family homes and ADUs are also a primary and compatible use.

Density: Up to 18 dwelling units per acre. This is equivalent to two dwelling units per 5,000 square foot lot.

Impacts of proposed modifications: The proposed modifications clarify the existing land use designation by listing a set of allowed uses rather than referencing the uses permitted by the R-2 Zone. The proposed land uses are consistent with the uses currently allowed by the Zoning Ordinance so this change in the list of permitted uses does not have any potential environmental impacts. The maximum allowed development potential increases from 14 dwelling units per acre currently to 18 dwelling units per acre in the proposed new designation.

Residential High Density (R3)

The Residential High Density designation is applied in areas of the City that can accommodate cottage courts, townhome developments, and/or apartments typically in single structures or a collection of cohesive structures with multiple units, common open space areas and shared amenities. This designation is often located in proximity to parks, schools, and public services, and is intended to compliment the character of adjacent lower density residential and neighborhood commercial development. ADUs are also a primary and compatible use.

Density: Up to 27 dwelling units per acre. This is equivalent to approximately three dwelling units per 5,000 square foot lot.

Impacts of proposed modifications: The proposed modifications clarify the existing land use designation by listing a set of allowed uses rather than referencing the uses permitted by the R-3 Zone. The proposed land uses are consistent with the uses currently allowed by the Zoning Ordinance with one exception: the current R-3 zone limits the types of multifamily uses to a fourplex or smaller but the proposed modifications allow apartments, which could include multifamily structures consisting of more than four units. Also, the maximum allowed development potential increases from 21 dwelling units per acre currently to 27 dwelling units per acre in the proposed new designation.

Commercial (C1, C2)

Commercial land use designations within the City allow a variety of commercial uses as their primary use type. Limited mixed residential uses compatible with a commercial setting may be allowed as provided by the zoning code.

Neighborhood Commercial (C1)

The Neighborhood Commercial designation is intended to provide for neighborhood shopping centers with commercial uses for nearby residential areas, consistent with neighborhood character and design. This includes limited-scale convenience retail, restaurants, offices, and personal services, including pedestrian-oriented neighborhood retail. Residential uses are allowed on upper floors and may be conditionally allowed on ground floors. Light industrial uses such as small scale manufacturing may also be permitted as applicable by the zoning code.

Intensity: Maximum Floor Area Ratio (FAR) 2.5

Impacts of proposed modifications: The proposed modifications clarify the existing land use designation and do not substantially change the allowed uses. The currently allowed residential density was the same as the Residential Multiple-Family designation which carried a 21 unit per acre maximum, and all residential uses required a conditional use permit. With the proposed changes, residential uses are principally allowed above the first floor and may be allowed on the first floor with a conditional use permit. And rather than residential density limits, the new Maximum FAR of 2.5 limits the intensity of both commercial and other uses. The current General Plan does not set FAR limits, which falls short of state mandates for General Plans to establish the density and intensity of land uses in the City (Gov. Code 65302(a)). The proposed new FAR limit is intended to meet the requirements of state law and to reflect current uses of the sites designated C-1. It is not expected to result in any significant changes in land use.

Community Commercial (C2)

The Community Commercial designation provides a full range of commercial uses for community convenience and visitor serving needs. This includes visitor-related retail, restaurants, lodging, entertainment, recreation, and tourist services, as well as upper floor residential and office uses. Intended to emphasize commercial retail and tourism-related uses, recreation, leisure activities, lodging, and upper floor office/residential uses. Primarily caters to visitors to historic and multistory buildings with pedestrian-scaled storefronts at the sidewalks. Residential and office uses are primarily allowed only on upper floors and non street- facing portions of buildings.

Intensity: Maximum FAR 3.0

Impacts of proposed modifications: The proposed modifications clarify the existing land use designation and do not significantly change the allowed uses. The currently allowed residential density was the same as the Residential Multiple-Family designation which carried a 21 unit per acre maximum, and all residential uses were principally permitted. With the proposed changes, residential uses continue to be principally allowed above the first floor and may be allowed on the first floor on non street-facing portions of buildings. And rather than residential density limits, the new Maximum FAR of 3.0 limits the intensity of both commercial and other uses. While the current General Plan does not set FAR limits, the proposed new FAR limit is intended to meet requirements of state law, and because it reflects current uses of the sites designated C-2, is not expected to result in any significant changes in land use.

Other Designations

Aside from the residential and commercial designations which are broadly applied throughout the City, the Land Use Element contains a set of other land use designations that are applied in a more limited way for specific purposes as described below.

Public Facility (PF)

The Public Facility designation is intended to be applied to lands owned by public agencies or to lands upon which such agencies operate public facilities. This includes public and private institutional uses, government facilities and services, schools, courts, cemeteries, fairgrounds, and major utility facilities, as well as parks and other public recreational facilities.

Intensity: N/A

Agricultural Exclusive (AE)

The Agricultural Exclusive designation is applied in areas where agricultural use is the predominant use of land and in which it is desired to protect agricultural operations including production of crops, livestock grazing, animal and poultry raising, apiaries, dairies, stables and associated residences and farmworker housing. Timber harvest is allowed under certain conditions.

Density: One farm dwelling per four acres and applicable farm worker housing as allowed by the zoning ordinance.

Natural Resources (NR)

The Natural Resources designation is applied to areas where protection, enhancement, restoration, management, study, and passive recreational use of habitats and natural areas are the desirable land uses. It is intended to protect land that is primarily suitable for permanent habitat preservation, compatible resource related uses, nature study, and natural-resource related recreation. Public access, passive recreation, active recreation, and visitor-related facilities (such as restrooms, interpretive centers, trailheads, parking areas, etc.) may be allowed as provided by zoning ordinance.

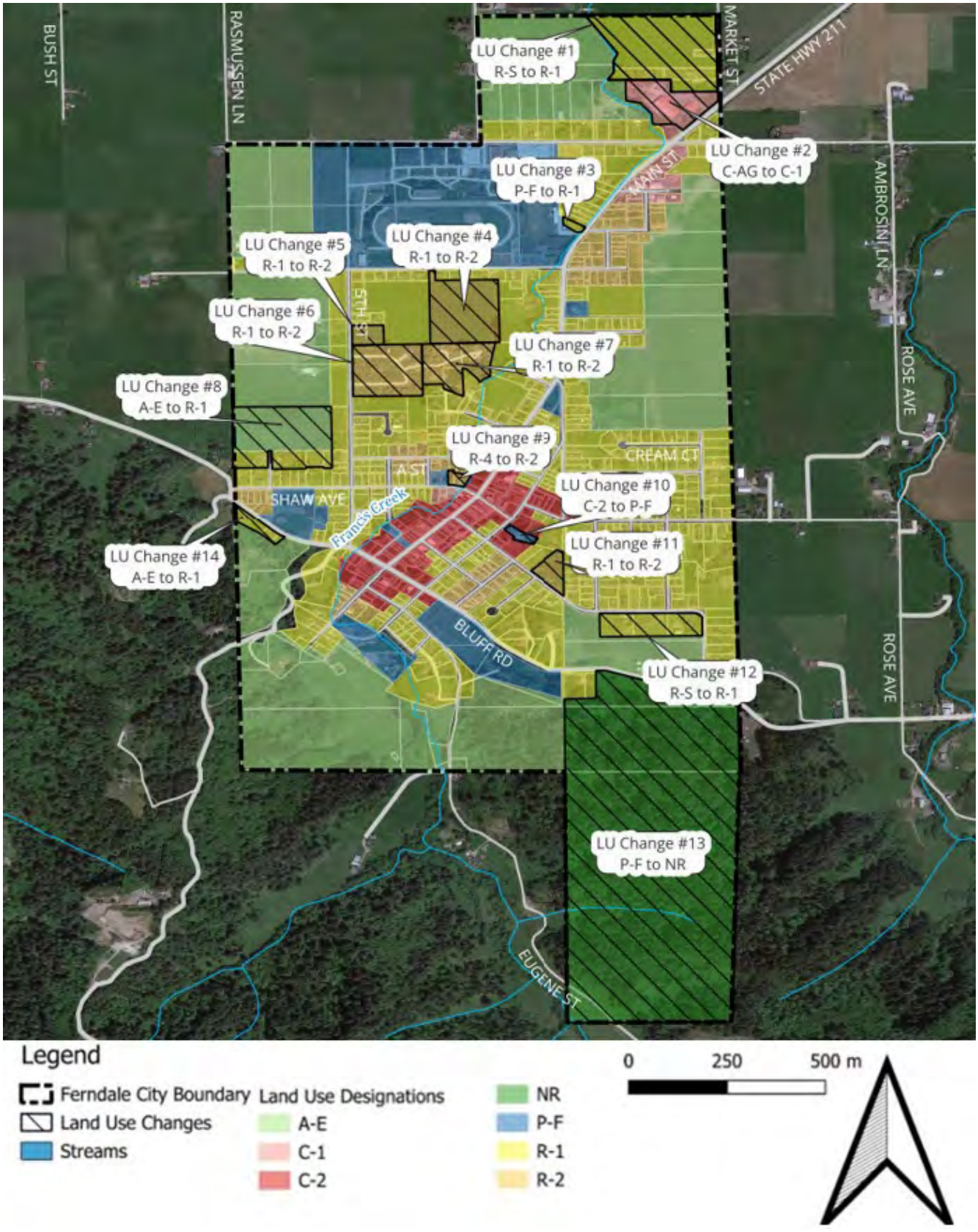
Intensity: Nature-study related buildings/structures may be constructed with a conditional use permit.

LAND USE MAP

The planned distribution of land uses throughout the City are shown on the Land Use Map which is shown below in Figure 3-6. This map is intended to guide re-use and potential future development in an orderly and logical manner while still taking into consideration community character. While the proposed Land Use Map has many similarities to the current one, there are several noteworthy changes. In particular, there are proposed increases in housing density for certain areas to encourage a broader variety of housing types. In other instances, changes were made to reflect and support existing uses.

Theoretically, both the existing land use designations and proposed land use designation changes could result in a much larger residential development potential if properties were redeveloped to the maximum residential density allowed by the General Plan. However, due to a variety of factors including economic feasibility and site-specific considerations, new residential development tends to occur on vacant properties. An exception is larger lots with existing structures that have reached the end of their economic life cycle, and the cost of demolition is outweighed by the economic returns of new development. Based on these considerations the residential development potential analyzed in this EIR refers to the development that is expected to occur within the planning period (through approx. 2045) and not full buildout.

Figure 3-6: Proposed Land Use Map Changes



Source: Planwest Partners, 2023

This approach is consistent with how residential development potential is calculated in the 2019 Housing Element. It assumes vacant sites and properties with structures at the end of their economic life cycle will be developed at 80 percent of the maximum level allowed by the General Plan. Other non-vacant sites are assumed to have no development potential and are not assigned any residential units. This method of analyzing the residential development potential ensures that realistic scenarios and outcomes are assessed rather than theoretically possible but highly unlikely scenarios. It also maximizes consistency with other Ferndale General Plan elements, such as the Housing Element.

A summary of the proposed changes to the Land Use Map is provided below:

Table 3-4: Summary of Land Use Map Changes

Reference	Acres	Description of Land Use Changes and Potential Impacts
#1	15.1	***Proposed Changes:*** The Land Use designation is proposed to change from R-S Residential Suburban to R-1 Residential Low Density. ***Allowed Uses:*** The principally permitted uses will remain essentially the same with a focus on single-family residential uses. ***Maximum Density:*** The maximum residential density allowed will increase from one to nine units per acre. With the proposed new R-1 designation, the development potential will increase on the property. The site is currently mostly vacant.
#2	5.3	***Proposed Changes:*** The Land Use designation is proposed to change from C-AG Commercial Agriculture to C-1 Neighborhood Commercial on the parcel. ***Allowed Uses:*** The principally permitted uses will expand from general agriculture to a broad range of commercial uses including offices and retail stores and residential uses on the upper floors as principally permitted uses. The site is currently developed with large buildings used for retail sales of agricultural products. ***Maximum Density/Intensity of Use:*** Residential uses are not allowed by the existing C-AG Land Use designation. With the new C-1 Land Use designation, the maximum residential density allowed on the upper floors of commercial buildings and the overall intensity of commercial uses on the site would be limited by a maximum FAR of 2.5. The existing buildings are assumed to remain in their current condition, so no new development potential is anticipated with this land use change during the planning period.
#3	0.3	***Proposed Changes:*** The Land Use designation is proposed to change from PF Public Facility to R-1 Residential Low Density on the parcel. The site is currently developed with a single-family residence and privately owned, so the change in the Land Use designation will better support the current and planned site use. ***Allowed Uses:*** The principally permitted uses will change to primarily single-family uses. ***Maximum Density:*** The existing building is assumed to remain during the planning period, so no new development potential is anticipated with this land use change.
#4	8.6	***Proposed Changes:*** The Land Use designation is proposed to change from R-1 Residential Low Density to R-2 Residential Medium Density on 8.6 acres of the 15.5-acre parcel. ***Allowed Uses:*** An allowance for multi-family dwellings will be added to the list of principally permitted uses with the change in Land Use designation.

Reference	Acres	Description of Land Use Changes and Potential Impacts
		Maximum Density: The maximum residential density allowed will increase going from seven to eighteen units per acre. With the change in the Land Use designation, the development potential will increase on the property. The site is currently vacant.
#5	1.2	***Proposed Changes:*** The Land Use designation is proposed to change from R-1 Residential Low Density to R-2 Residential Medium Density on the parcel. ***Allowed Uses:*** An allowance for two-family dwellings and other multifamily unit configurations will be added to the list of principally permitted uses with the change in Land Use designation. ***Maximum Density:*** The maximum residential density allowed will increase going from seven to eighteen units per acre. With the proposed change in the land use designation, the realistic development potential will increase on the property.
#6	7.0	***Proposed Changes:*** The Land Use designation is proposed to change from R-1 Residential Low Density to R-2 Residential Medium Density on the parcel. ***Allowed Uses:*** An allowance for two-family dwellings and other multifamily unit configurations will be added to the list of principally permitted uses with the change in Land Use designation. ***Maximum Density:*** While the maximum residential density allowed will increase from seven to eighteen units per acre, it is unlikely the use of the property will actually change since the parcels are already fully developed with residential uses.
#7	5.4	***Proposed Changes:*** The Land Use designation is proposed to change from R-1 Residential Low Density to R-2 Residential Medium Density on three parcels. ***Allowed Uses:*** An allowance for two-family dwellings and other multifamily unit configurations will be added to the list of principally permitted uses with the change in Land Use designation. ***Maximum Density:*** While the maximum residential density allowed will increase from seven to eighteen units per acre, it is unlikely the northern half of the property will change uses since it is already developed with residential uses. The +/- 1-acre portion of the property south of Trident Lane, however, is vacant (APN 030-101-008).
#8	11.7	***Proposed Changes:*** The Land Use designation is proposed to change from A-E Agricultural Exclusive to R-1 Residential Low Density on five parcels; four of the parcels are already developed with existing single-family uses. ***Allowed Uses:*** The allowed use of this property would change from agricultural to single family residential use. ***Maximum Density:*** No subdivisions are allowed in the A-E Land Use designation so the maximum residential density allowed will increase from one unit per parcel to nine units per acre with the R-1 designation. It is unlikely four of the parcels with existing single-family homes would be substantially further developed. Approx. 9.2 acres however is vacant and could be developed with the proposed R-1 designation.
#9	0.5	***Proposed Changes:*** The Land Use designation is proposed to change from R-4 Apartment Professional to R-2 Residential Medium Density on three parcels. ***Allowed Uses:*** An allowance for two-family dwellings and other multifamily unit configurations will be added to the list of principally permitted uses with the change

Reference	Acres	Description of Land Use Changes and Potential Impacts
		in Land Use designation. Also, the allowance for professional offices would be deleted. ***Maximum Density:*** It is unlikely any of the parcels would be further developed as these properties are already fully developed. No new development potential is anticipated for this land use change.
#10	0.5	***Proposed Changes:*** The Land Use designation is proposed to change from C-2 Community Commercial to PF Public Facility on the parcel. ***Allowed Uses:*** The principally permitted uses will change from allowing a broad range of retail and office uses to public uses such as the existing use of the property as the location for the City's police department. The change in the Land Use designation will better support the current use of the site. ***Maximum Density/Intensity of Use:*** Residential uses are not allowed in the PF Land Use designation. The intensity of use is limited by the public agency. While there is room on the parcel to expand the existing Police Department building, no significant expansion of the use is anticipated during the planning period.
#11	1.6	***Proposed Changes:*** The Land Use designation is proposed to change from R-1 Residential Low Density to R-2 Residential Medium Density on the parcel. ***Allowed Uses:*** An allowance for two-family dwellings and other multifamily unit configurations will be added to the list of principally permitted uses with the change in Land Use designation. ***Maximum Density:*** The maximum residential density allowed will increase from seven to eighteen units per acre. The existing single-family home on the property appears towards the end of its economic life so redevelopment of this site is considered likely during the planning period of the General Plan. The realistic development potential for this property will increase with the proposed R-2 designation.
#12	4.6	***Proposed Changes:*** The Land Use designation is proposed to change from R-S Residential Suburban to R-1 Residential Low Density on three parcels. ***Allowed Uses:*** The principally permitted uses will remain essentially the same with a focus on single-family residential uses. ***Maximum Density:*** The maximum residential density allowed will increase from one to nine units per acre. However, it is unlikely any of the parcels would be substantially further developed as each of these properties are already developed with single-family residences.
#13	112.1	***Proposed Changes:*** The Land Use designation is proposed to change from PF Public Facility to NR Natural Resources on three parcels known as "Russ Park". ***Allowed Uses:*** The principally permitted uses will change from developed public uses such as schools and playgrounds to natural resource conservation and related uses such as the existing use of the property for outdoor public recreational hiking. The change in the Land Use designation will better support the current use of the site. ***Maximum Density:*** Residential uses are not allowed in either the PF or NR Land Use designations so there will be no change in the residential density.

Reference	Acres	Description of Land Use Changes and Potential Impacts
#14	1.3	***Proposed Changes:*** The Land Use designation is proposed to change from A-E Agricultural Exclusive to R-1 Residential Low Density on three parcels. ***Allowed Uses:*** The use of these parcels would be consistent with the current single family residential use. ***Maximum Density:*** The maximum residential density allowed will increase from one unit per parcel to nine units per acre with the R-1 designation. However, it is unlikely there will be substantial additional development as two of the properties are already fully developed with single-family homes.

Source: Planwest Partners, 2023

GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

The proposed new goals, policies, and implementation measures supplement the Land Use descriptions and Land Use Diagram described above to more fully support existing and new development in the City. They are presented below as they appear in the Land Use Element.

Goal LU-1: To ensure Ferndale's growth will proceed in a thoughtful, orderly manner, retains its unique village character, and is located where there are efficient and equitable public services available.

Policy LU-1.1 – Diverse Uses: Maintain a diverse range of compatible land uses that offer adequate flexibility to respond to evolving market opportunities.

Policy LU-1.2 – Community Amenities: Provide safe, clean, and pedestrian friendly streetscapes and public spaces through careful design and active maintenance of sidewalks, landscaping, street furnishings, park furnishings, lighting, public art, and other elements.

Policy LU-1.3 –Design Standards: Ensure new development is compatible with existing historic architecture and community character by creating objective design standards to maintain the small-town charm of the City.

Policy LU-1.4 – Residential Infill: The infilling and completion of residential neighborhoods should be encouraged to take full advantage of available public services.

Policy LU-1.5 – Diverse Housing: Promote a diversified housing stock throughout the City to increase housing supply, types, accessibility, and affordability for individuals and families of all incomes.

Policy LU-1.6 – Special Needs and Senior Housing: Work with community organizations and applicants to develop housing for special needs populations with an emphasis on ADA accessibility, universal design, and low-maintenance housing for seniors to support those who wish to age in place.

Policy LU-1.7 – Planned Development: Promote the use of the Planned Development (PD) zoning overlay for areas of special interest to the City, including APN 030-091-030 (see inset map), that could support a range of housing types and community amenities, addresses stormwater drainage, and provides for at least two points of ingress/egress for proposed developments.



Policy LU-1.8 – Multi-Modal Transportation: Encourage multi-modal travel by increasing bike and pedestrian routes throughout the City enhanced with bike parking, exercise stations, and safe roadway crossings. Actively seek out public access easements and/or right-of-way acquisition for pedestrian creek crossings to better connect Ferndale Housing and potential development on APN 030-091-030 (see policy LU-1.7) to Main Street. Potential crossings may include Fern Avenue, Vanston Avenue, E Street, or an alternative location.

Policy LU-1.9 – Right-of-Ways: Ensure street design and right-of-way acquisition will support pedestrian and bike mobility. This includes seeking acquisitions from willing landowners to develop a broader trail network within the City.

Policy LU-1.10 – Community Spaces: Require higher-density neighborhoods and mixed-use areas to incorporate small public spaces and have sidewalks furnished with appropriate ADA pedestrian amenities providing comfortable and attractive settings for high levels of pedestrian activity.

Goal LU-2: A welcoming and supportive environment for businesses to grow, thrive and continue to contribute positively to Ferndale's economy.

Policy LU2.1 – Commercial Infill: Promote infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors and to prevent disturbance of residential neighborhoods.

Policy LU2.2 – Tourism and Resident Services: Encourage development of resident service businesses (i.e. individual and group medical practices), building and maintenance supplies, and repair businesses by designating these as principally permitted uses in commercial zones while prioritizing tourism services in the Main Street Historic District.

Policy LU2.3 – Existing Buildings and Sites: Support economic investment in existing buildings and sites along Historic Main Street including facade improvements, new paint and signage, retrofitting, adaptive reuse, improved sidewalks, and upgraded landscaping in keeping with the historic nature of the City.

Policy LU2.4 – Light Industrial Uses: Support light industrial uses (i.e. research & development, light manufacturing, metal, wood and leather works) through modified zoning practices in order to provide diverse employment opportunities for City residents while maintaining compatibility with adjacent uses.

Policy LU2.5 – Main Street Historic Area Preservation, Uses, and Activities: Support and encourage the following uses and activities within the Main Street Historic area:

- Mixed-use emphasizing a highly interactive street level retail and service setting with office and residential uses primarily above and in portions of buildings that do not have street frontage.
- Uses and activities that extend Main Street Area activity into evening hours.
- Rehabilitation and/or conversion of vacant upper floors of buildings and portions of buildings that do not have street frontage to increase housing supply.
- Encourage live-work and mixed-use spaces through reduced or eliminated parking requirements and other incentives.
- Neighborhood commercial uses and other services for residents and employees.
- Specialty and boutique shops, restaurants, and other locally owned storefront businesses.
- Cultural and art related facilities and events that attract patrons with renovation of the Ferndale Repertory Theater and other historic facilities.
- Visitor serving uses and recreational activities on street frontages.
- Professional and business services, such as attorneys, realtors, architects, engineers, investment specialists, and other professions that provide a daily customer base for retail and food-related uses.
- Craftsman shops where items such as baked goods, glass, pottery, small furniture, clocks, and other specialized items are made and sold onsite.
- Programs and activities that educate the public about Main Street's history and historic resources.

Policy LU2.6 – Existing Commercial Areas Revitalization. Reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District shall be encouraged. Upgrades should include the provision of facilities to accommodate bicycles and pedestrians to reduce vehicle trips, and residential units on upper floors or in new structures.

Policy LU2.7 – Increase Residential Uses. Commercial developments should include residential units where feasible. Residential units should be located on upper floors or at the rear, to maintain uninterrupted commercial uses at the street level. Residential uses in new structures shall comply with the R-3 development standards.

Policy LU2.8 – City Parking Standards. Consider initiating periodic parking studies to assess potential parking needs, capacities, and recommendations.

Goal LU-3: Protect, preserve, restore, rehabilitate, and enhance open spaces and natural resources.

Policy LU-3.1 – Conservation: Preserve existing open space and agricultural land at the edges of and surrounding the City.

Policy LU-3.2 –Improve Drainage: Incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding.

Policy LU-3.3 – Manage Flood Plains: Development is to be encouraged outside the 100-year flood plain. Development within the 100-year flood zone must have ground floor elevations above 100-year flood elevation and shall not significantly increase downstream flow levels and be in compliance with the Drainage Ordinance.

Policy LU-3.4 – Francis Creek Corridor: The Francis Creek riparian corridor shall be maintained or improved to permit natural flow where possible, prevent flooding in developed areas, and maintain natural habitat uses where appropriate.

Policy LU-3.5 – Forest Lands Preservation: Encourage preservation of forest resources and require timber management plans for any proposed forested lands conversion or harvesting that address erosion control and revegetation. The management of timberlands shall be encouraged to use current principles of sustainable forestry for all aspects of forest use and function: recreation, timber production, biodiversity, air and water quality, and carbon storage.

Policy LU-3.6 – Funding: Develop a program and pursue funding to coordinate acquisition of important open space property from willing landowners through conservation and/or drainage easements or other mechanisms.

Policy LU-3.7 – Regional Coordination: Maintain an active relationship with adjacent communities and government agencies to encourage cooperative management of natural resources and ecosystems in the surrounding area. Coordinate open space planning, acquisition, and development efforts with those of Humboldt County and regional and State agencies.

Goal LU-4 – Conserve soil resources and minimize erosion and other soil depleting processes.

Policy LU-4.1 – Russ Park Stewardship: Actively manage Russ Park for trails, habitat biodiversity, and stable soils in collaboration with local, regional, and state agencies.

Policy LU-4.2 – Francis Creek Riparian Habitat and Erosion Control: A streamside protection area shall be established along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. Buffers from the top of bank or the edge of the riparian dripline, whichever is greater, on either side of the stream, shall be established. Development within streamside protection areas shall only be permitted under limited circumstances where mitigation measures have been provided to minimize potential environmental effects including:

- Road, bridge, and trail replacement or construction may be permitted that would not degrade fish and wildlife resources or water quality, and where vegetative clearing is kept to a minimum.
- Fencing along property boundaries and along buffer boundaries to prevent bank erosion and degradation of natural riparian vegetation.
- Maintenance of existing roads, driveways, utility lines, and structures.
- Agricultural operations compatible with maintenance of riparian resources.
- The removal of vegetation for disease control, flood control, or public safety purposes may be approved, in consultation with CDFW.
- In areas where existing development is adjacent to the creek, buffers may be reduced where the City determines, in consultation with CDFW, that the reduction will not significantly affect the biological resources of the creek or stream within the property.
- When the prescribed buffer prohibits development of the site for the primary use for which it is designated, measures shall be applied that allow development and result in the least environmentally damaging feasible project.

Policy LU-4.3 – Agricultural Use Preservation: Encourage infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.

The Land Use Element includes the following implementation programs:

LU-IP1: Develop Objective Design Standards: In coordination with the Planning Commission, develop objective design standards to provide a common basis for the evaluation of design during the project approval process.

Department: Planning in coordination with PC and CC When: Within one year

LU-IP2: Zoning Code Updates: Update the zoning code as necessary for land use designation, density, intensity, and lot size consistency. Consider adding affordable housing provisions and a Francis Creek corridor streamside protection zone.

Department: Planning in coordination with PC and CC When: Within two years

LU-IP3: Planned Development Designation: Consider applying the Planned Development overlay for APN 030-091-030 that establishes objective standards for development including community spaces, mixed housing types, minimizes off-site drainage, and includes at least two points of ingress/egress to the development (one from Arlington Ave. and one from 5th street).

Department: Planning in coordination with PC and CC When: Within one year

LU-IP4: Drainage Infrastructure Funding: Actively seek out funding programs to complete stormwater drainage projects for erosion control, retention, and detention facilities to alleviate flooding within the City.

Department: Planning, City Manager When: Ongoing

LU-IP5: Drainage Master Plan Priorities: Review Drainage Master Plan priority projects every five years to maintain an up to date list for guiding drainage improvements and seeking funding opportunities.

Department: Engineering in coordination with Drainage Committee When: Every 5 years

LU-IP6: Stream Set Back Standards: Establish a 50 foot stream set back requirement for new development along designated waterways within the City including Francis Creek. The set back may be reduced if specific evidence is provided showing there will be no impact to the waterway.

Department: Planning/Engineering When: Within 2 years

LU-IP7: Open Space Action Program: Seek funding to develop an Open Space Action Program that will include specific open space restoration, maintenance, and acquisition/easement projects with associated timelines.

Department: Planning When: Within 5 years

SAFETY ELEMENT UPDATE

The Safety Element is intended to provide an overview of potential hazards in the City and provide recommendations for decreasing those hazards so there is a lower risk to life and property. The Safety Element, including its goals, policies, and implementation programs, is considered a part of the Project. The specific goals and policies of the Safety Element are as follows:

Goal 1 – Geologic and Seismic Hazards: Minimize the risk to public health and safety and loss of social, economic, and environmental welfare resulting from seismic and geologic activities.

Policy 1.1 Update City zoning regulations to incorporate standards for seismic setbacks, structural requirements, and hillside development standards.

Policy 1.2 Require geotechnical evaluation for development projects with the potential to expose people or property to geological hazards, such as landslides, slope failures or soil subsidence.

Policy 1.3 In areas with identified geologic hazards, development shall conform to geotechnical report mitigation measures and/or project and site modifications to respond to site-specific hazards and conditions.

Policy 1.4 Improve drainage, plant soil-stabilizing non-pyrophytic native vegetation, and provide structural reinforcements in landslide-prone areas, e.g., Bluff Street and Wildcat Road.

Policy 1.5 Collect and maintain current geologic data to identify hazardous areas.

Policy 1.6 Ensure that public facilities are structurally sound and able to withstand seismic shaking and the effects of seismically-induced ground failure.

Implementation Programs

Program 1.a Require development applications for projects on slopes of 15 percent or more to submit a geologic investigation and report by a qualified engineering geologist. The report shall address potential for slope failure, soil subsidence and related geologic events, and recommend measures to minimize hazards.

Program 1.b Prohibit development on excessively steep hillsides where slope stability mitigations are not deemed feasible by the City Engineer and where a significant hazard to people or property may result.

Program 1.c Where known landslide areas exist, require mitigation actions for slope stability. This can include, with affected property owner support, landslide repair extending beyond the boundaries of a proposed development project site. Encourage planting of vegetation on unstable slopes to protect structures at lower elevations. Native plants may be required for landscaping in areas with landslide potential to eliminate the need for supplemental watering and to reduce the risk of landslide.

Program 1.d Enforce California Building Code requirements, including seismic design provisions, as part of building permit issuance and inspection.

Program 1.e Review existing critical and emergency structures identified in Table 8-2 for any significant siting, design, or construction problems that would make them vulnerable in an earthquake, and incorporate findings of the review into the City's Emergency Operations Plan and long-term programs for upgrading or relocating vulnerable facilities.

Program 1.f Monitor new building materials used for earthquake stability and incorporate such materials into plan checks when applicable. Update design review standards for materials in the Zoning ordinance when applicable.

Program 1.g Adopt the Uniform Code for the Abatement of Dangerous Buildings.

Program 1.h Direct the Building Inspector to identify and prioritize critical City facilities that need seismic retrofits. Direct the Building Inspector to undertake seismic retrofitting work as necessary and based on available funding.

GOAL 2 - Flood Protection: Reduce the risk to life and minimize physical injury, property damage, and public health hazards from the effects of flooding.

Policy 2.1 Participate with a national flood insurance program.

Policy 2.2 Work with the County and the United States Army Corps of Engineers to receive and implement updated flood control measures and information.

Policy 2.3 Assess and keep appraised of the potential risks to persons and property from flooding within the City, including updated floodplain mapping.

Policy 2.4 Periodically update the City of Ferndale Drainage Master Plan.

Policy 2.5 Implement a public outreach program to increase public awareness of stormwater management issues and promote best management practices for stormwater management.

Policy 2.6 Inform citizens of potential risks associated with flooding within the City and provide preparation and response guidance.

Policy 2.7 Require development in areas subject to flooding to minimize or eliminate the exposure of people and property flooding hazards.

Policy 2.8 Encourage development to balance or enhance the natural landscape features of a site to reduce impervious surfaces.

Policy 2.9 Utilize flood control methods that are consistent with Regional Water Quality Control Board Policies and Best Management Practices.

Implementation Programs

Program 2.a In conjunction with the FEMA mandated updates to the Humboldt Operational Area Multi-Agency Multi-Hazard Mitigation Plan (HMP), identify funding sources for and facilitate mapping of the City's flood zones.

Program 2.b Complete and implement provisions of the HMP, consistent with FEMA requirements.

Program 2.c Coordinate with FEMA and other agencies in the evaluation and mitigation of future flooding hazards that may occur as a result of sea level rise.

Program 2.d Ensure that local regulations comply with FEMA standards in order to maintain good standing and compliance with the National Flood Insurance Program (NFIP) through implementation of floodplain management programs that meet minimum NFIP requirements.

Program 2.e Coordinate flood hazard mitigation efforts with the County to seek compliance with the Disaster Management Act 2000 to ensure eligibility for funding through FEMA grant programs.

Program 2.f Request that the County refer development projects located within the City's watersheds to the City for comment. Continue to comment on County projects with the potential to increase runoff and flood hazards within the City. Standardize mitigation requirements to offset cumulative impacts of individual projects with potential to increase runoff and flood hazards within the City.

Program 2.g Evaluate the compatibility of critical, essential, high occupancy, and normal to low risk uses in areas within the 100-year floodplain during the review of all discretionary and ministerial actions.

Program 2.h Pursue sources of funding to ensure ongoing maintenance of the City's storm drains.

Program 2.i Construct levees surrounding at-risk City facilities. Continue to support the development of the wastewater surge pond capacity and flood protection project for the City's wastewater treatment plant on Port Kenyon Road.

Program 2.j Perform preventative maintenance to maintain flow capacity of Francis Creek consistent with the City's Lake and Streambed Alteration Agreement.

Program 2.k Identify areas subject to flooding, steps to reduce potential property damage, and flooding emergency evacuation procedures on the City's website.

Program 2.l Review development plans of existing sites to ensure necessary upgrades are provided to the City's storm drainage system.

Program 2.m Review development proposals to ensure that structures designed for human occupancy are accessible during and protected from a 100-year storm by elevating lowest habitable floor at least one foot above the floodplain.

Program 2.n Request a drainage study for development in the 100-year floodplain to ensure adequate protection from flood hazards, and no net increase in downstream flood hazards.

Program 2.o Require that development comply with Regional Water Quality Control Board discharge permit requirements.

Program 2.p Undertake drainage improvement projects as prioritized in the adopted Drainage Master Plan as funding becomes available to address factors contributing to localized flooding.

GOAL 3 - Wildland and Urban Fires: Prevent the loss of lives, injuries, and property damage due to wildland and urban fires.

Policy 3.1 Coordinate with the Ferndale Volunteer Fire District to maintain adequate fire protection staffing levels, equipment and facilities to reduce risks to persons and property within the City from urban and wildland fires. Mitigate impacts of new development on the city's ability to maintain adequate service levels.

Policy 3.2 Ensure adequate water supplies for fire suppression within the City.

Policy 3.3 Require fire safe construction practices, through site design, landscaping and building materials, clear and legible street and address signs, and sprinklers.

Policy 3.4 Reduce fire hazard risks in existing developments by promoting defensible space standards.

Policy 3.5 Provide fire safety information to residents, business owners, and the construction, insurance, real estate, landscaping and building supply industries. This could include information about non-combustible roofing, fire safe construction, adequate emergency water supplies, visible address and road identification/signage, road clearances, use of non-pyrophytic and native plants for landscaping and emergency evacuation procedures.

Policy 3.6 Disseminate fire prevention education programs to neighborhoods, businesses, and schools. Foster a proactive fire prevention approach, emphasizing the relationship between fire prevention/hazard reduction and forestry and ecological restoration.

Policy 3.7 Promote CAL FIRE and Humboldt Fire Safe Council goals and objectives.

Policy 3.8 Promote smoke detector and fire extinguisher installation and maintenance in all habitable structures.

Implementation Programs

Program 3.a Request annual fire hydrant flow pressure and volume tests, especially in high fire hazard areas, by local water providers. System deficiencies shall be addressed as soon as possible.

Program 3.b Study potential backup water supplies for emergency fire flow needs.

Program 3.c Require adequate access for emergency vehicles and firefighting equipment on all development projects.

Program 3.d Monitor new building materials used for fire resistance and incorporate such materials into plan checks when applicable. Update design review standards for materials in the Zoning ordinance when applicable.

Program 3.e Provide information on fire safe practices through the City's website, including fuel reduction and non-flammable landscaping.

Program 3.f Refer development proposals to the Ferndale Volunteer Fire Department for comment on measures necessary to mitigate or reduce fire hazards.

Program 3.g Update and implement the City's weed abatement regulations.

Program 3.h Participate in the planning efforts of and work cooperatively with the Humboldt Fire Safe Council.

Program 3.i Require street signs and clear and legible addresses with Design Review and building permits.

Program 3.j Require smoke detectors and fire extinguishers as a condition for building permits.

Program 3.k Explore entering into a cooperative agreement with CAL FIRE for wildland fire response service for Russ Park and the area within Ferndale city limits that is located south of Ocean Avenue and Bluff Street.

GOAL 4 – Climate Change: Minimize the risk to public health and safety and loss of social, economic, and environmental welfare resulting from climate change.

Policy 4.1 Continue to participate in and support the Regional Climate Action Plan.

Policy 4.2 Reduce citywide emissions to 80 percent of 1990 levels by 2050 in accordance with Executive Order S-3-05.

Policy 4.3 Support the electrification of homes and businesses and use of renewable propane to help reduce reliance on fossil fuels including natural gas and traditional propane.

Policy 4.4 Continue to support active transportation by investing in pedestrian and bike trails.

Implementation Programs

Program 4.a Install ten new electric vehicle charging stations by 2030.

Program 4.b Work with Redwood Transit to assess the feasibility of at least twice per day bus service to Ferndale.

Program 4.c Designate Russ Park as a natural resource area to protect the area from potential development and deforestation.

Program 4.d Designate five miles of new trail systems in and around the City by 2040 to support active transportation. Develop designated new trails as funding becomes available.

Program 4.e Create development standards that require full electrification of buildings to reduce reliance on propane.

Program 4.f Seek out funding to incentivize conversion of propane appliances to electric or renewable propane for homeowners and businesses.

Program 4.g Transition all City owned vehicles to electric by 2040, as feasible.

Program 4.h Implement the Regional Climate Action Plan measures that are feasible and under the City's control.

GOAL 5 – Hazardous Materials: Protect people and property from risks associated with the use, transport, treatment and disposal of hazardous materials and wastes.

Policy 5.1 Minimize exposure to known and suspected hazardous materials by routine transport, use, disposal, or accidental release.

Policy 5.2 Work with appropriate agencies to keep current on hazardous materials transport, storage, treatment, and disposal regulations.

Policy 5.3 Work with property owners and applicable regulatory agencies to identify and eliminate hazardous waste releases.

Policy 5.4 Inform the public about regulations for hazardous material and waste transport, storage, treatment, and disposal.

Policy 5.5 Encourage safe hazardous material and waste recycling and disposal.

Policy 5.6 Ensure adequate fire protection service levels as necessary to reduce risks to persons and property from hazardous materials spills or releases.

Policy 5.7 Cooperate with other jurisdictions on regional hazardous materials use, transport, treatment and disposal practices.

Implementation Programs

Program 5.a Require that all land uses that generate, use, handle, store, dispose of, and/or emit hazardous materials or waste be in compliance with applicable laws and regulations.

Program 5.b Enforce adopted building and fire codes to minimize potential public harm from hazardous material storage.

Program 5.c Update the Ferndale General Plan Transportation & Public Facilities Element to designate City roadways used for hazardous materials transport. If facilities such as schools, hospitals, childcare centers, or other facilities with special evacuation needs are located along these routes, post emergency response plans for unauthorized hazardous materials release.

Program 5.d Require that new facilities that produce, use, store, transport or dispose of hazardous materials locate a safe distance from land uses that may be adversely impacted by such activities. Conversely, do not allow new sensitive facilities, such as schools, child-care centers, and senior centers, to be located near existing sites that use, store or generate hazardous materials.

Program 5.e Require new industries that store and process hazardous materials to provide a buffer zone at property boundaries sufficient for public safety.

Program 5.f Coordinate with County, State, and Federal agencies to minimize exposure to hazardous materials.

Program 5.g Prohibit the siting of new hazardous waste repositories, incinerators, and facilities within the 100-year floodplain.

Program 5.h Require fire safe design standards, including proper storage and use of hazardous materials, for new development consistent with applicable state and federal regulations.

Program 5.i Post household hazardous waste drop-off dates and locations on the City's website.

Program 5.j Support County efforts to sponsor household hazardous waste and e-waste recycling and disposal drop-off days. Allow City property to be used for drop-off and assist in promoting disposal and recycling opportunities.

Program 5.k Seek Ferndale Volunteer Fire Department input for identifying measures necessary to mitigate hazardous materials use and storage risks.

Program 5.l Support the Ferndale Volunteer Fire Department's efforts to maintain state-of-the art first responder equipment and trained personnel for hazardous spills and emissions response.

Program 5.m Cooperate with the County to implement the Hazardous Materials Area Plan and the Integrated Waste Management Plan.

GOAL 6 – Acceptable Risk: Reduce the effects of hazards and hazardous events to below the acceptable risk level.

Policy 6.1 Protect life and property through land use and development practices that avoid or mitigate the effects of natural hazards.

Policy 6.2 Land division and development shall be designed and constructed so that acceptable risk levels as defined in Table 4 are not exceeded.

Policy 6.3 Map known areas and sources of risk and make this public information.

Policy 6.4 Locate development, especially critical facilities, away from hazards as determined in Table 3 unless the hazards can be mitigated to the satisfaction of responsible agencies.

Policy 6.5 Scale development proportionally to the level of acceptable risk for that development as determined in Table 4.

Policy 6.6 Implement measures that reduce risk, including development guidelines, building occupancy limitations, renovation, and demolition.

Policy 6.7 Adopt and implement a comprehensive hazard mitigation plan to minimize the impacts of natural and man-made disasters pursuant to the requirements of the federal Disaster Mitigation Act of 2000.

Policy 6.8 Encourage the development of connected neighborhoods that provide at least two exit routes that can be utilized during emergency evacuation.

Implementation Programs

Program 6.a Regularly review and update regulations to ensure applicable mitigation measures are clearly defined; requirements for geotechnical and geologic investigations to identify and mitigate geologic hazards are provided; procedures for the review of geotechnical and geologic reports submitted for development are provided; fire safety of building construction is improved; and defensible space is defined and its benefits balanced with City conservation goals.

Program 6.b The City has adopted a hazard mitigation plan pursuant to the requirements of the federal Disaster Mitigation Act of 2000, and will implement and evaluate the Plan on a regular basis as necessary to comply with federal and state laws. The City will support and actively participate in plan maintenance protocols as outlined in Volume 1 of the adopted Hazard Mitigation Plan.

Program 6.c Review the City's subdivision ordinance and update as necessary to ensure that new subdivisions and housing developments have adequate emergency ingress and egress.

Program 6.d As appropriate support retrofitting and relocation of structures located in hazard areas prioritizing those that have experienced repetitive losses and/or located in high to medium risk areas.

GOAL 7 – Emergency Preparedness: Ensure that City staff and citizens are adequately prepared to respond to and recover from natural or man-made disasters.

Policy 7.1 Establish and maintain an effective emergency response program appropriate for potential events.

Policy 7.2 Comply with NOAA requirements to maintain Storm Ready and Tsunami Ready certificates.

Policy 7.3 Provide guidance to citizens for preparing for and responding to emergencies.

Policy 7.4 Designate, equip, and publicize locations of emergency assembly points throughout the City.

Policy 7.5 Coordinate with the Ferndale Volunteer Fire Protection District on emergency access requirements and specifications.

Policy 7.6 Utilize mutual aid agreements that provide public safety personnel in times of emergency.

Policy 7.7 Designate alternate routes to transport public safety employees from outlying areas when main route is impassable.

Policy 7.8 Ensure that public safety facilities, apparatus, and equipment are designed and constructed adequately to efficiently operate paramedic, fire, and police services in times of disaster.

Policy 7.9 Make facilities and equipment needed by residents accessible as soon after a major disaster as possible.

Implementation Programs

Program 7.a Update and adopt the City of Ferndale Emergency Operations Plan (EOP), and implement EOP actions and projects. Ensure that City departments have coordinated Standard Operating Procedures. Update Appendix C: Recovery Operations and include measures to address post-disaster needs of the City's residents and businesses for inspections, debris removal, streamlined permit issuance for rebuilding, and other essential services.

Program 7.b Upgrade the City's Emergency Operations Center (EOC) and train City staff as needed. Review emergency equipment needs, such as a defibrillator at City Hall, and prioritize acquisition. Incorporate emergency preparedness expenditures into a long-term City Capital Improvement Plan.

Program 7.c Establish redundant communication capabilities throughout the City.

Program 7.d Develop and implement consolidated emergency response programs and plans for fire, flooding, seismic and other potential hazard events contained in the City's EOP. Distribute the plans to City departments, emergency response providers and support groups.

Program 7.e Maintain National Incident Management System and Incident Command System training for City staff.

Program 7.f Identify opportunities for training Ferndale citizens and staff on community emergency response. Include the Humboldt County Office of Emergency Services (OES) in training exercises.

Program 7.g Involve the community, neighborhoods, and local businesses in disaster response planning.

Program 7.h Regularly update and publicize the City's EOP to include evacuation routes, emergency connectors, and emergency shelters in conformance with state guidelines through the City's website, local radio, local newspaper, and other community outreach sources.

Program 7.i Hold regular (at least one per year) emergency preparedness drills, and include local Community Emergency Response Training (CERT) groups, County OES and related emergency services agencies and groups.

Program 7.j Promote awareness and caution among residents regarding possible natural hazards, including landslides, earthquakes, flooding, and fire hazards through creating and maintaining a website with current information about local natural hazards and emergency preparedness.

Program 7.k Support mutual aid agreements with local agencies and jurisdictions that provide public safety personnel in times of emergency.

Program 7.l Include a public safety "ingress" component to the City's EOP.

Program 7.m Conduct performance audits of public safety facilities and identify any needed/corrective measures.

Program 7.n Identify needed emergency supplies to assist Ferndale residents in the first days following an emergency or major disaster.

Program 7.o Adopt a long-term capital improvement plan that will provide the City the financial capability to fund capital projects that include hazard mitigation projects, and funds for use by the City in times of an emergency or major disaster.

Program 7.p Continue involvement in the Ele River Valley Emergency Preparedness Team to enhance emergency preparedness in the Eel River Valley.

Program 7.q To reduce potentially hazardous conditions along evacuation routes, the City will coordinate with the County and City of Rio Dell for the stabilization of Blue Slide Road and roadway surface from Ferndale to Rio Dell. The City will also coordinate and participate with Rio Dell, the County, and CAL Fire to develop a local vegetation treatment program to reduce wildfire risks along evacuation routes, and leverage the California Vegetation Treatment Program (CalVTP) if appropriate.

3.6 Individual Project Review and Future Discretionary Actions

The following list specifies the anticipated approvals necessary for the proposed Project. The City Planning Commission and City Council (the City Council is the final approving authority) will review the General Plan Land Use and Safety Elements and the PEIR and supporting documents to consider whether or not to take the following actions:

- Certification of a PEIR.
- Approval of the PEIR Findings,
- Adoption of a Mitigation, Monitoring, and Reporting Program in conjunction with the PEIR,
- Adoption of the Land Use and Safety Element Updates, and
- Adoption of the revised Zoning Ordinance and Zoning Map.

This document has been drafted at the program level and is intended to cover general matters and environmental effects for the overarching Land Use Element, Safety Element, and Zoning Code amendments. Subsequent projects may require project level environmental review and may incorporate by reference the discussion included in this PEIR. Additionally, subsequent development projects may also require review and approval by various departments or agencies outside of the City, including but not limited to those listed below. It should be noted that the following actions are associated with the future development of the City as it develops pursuant to the General Plan. That is, actions of the types listed here would occur whether or not the proposed Project was approved, and as such, these actions are listed as general items and are not directly associated with the proposed Project.

- Future development within or altering a 100-year floodplain or other FEMA-mapped flood hazard area would need to obtain a Letter of Map Revision (LOMR), Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Revision Based on Fill (CLOMR-F) that describes the effect that the proposed project or fill would have on the National Flood Insurance Program map.
- National Pollutant Discharge Elimination System (NPDES) Construction General Permits will be required for grading activities of 1 acre or larger. The developer must file a Notice of Intent with the Regional Water Quality Control Board (RWQCB) and obtain a General Construction Activity Stormwater Permit pursuant to the NPDES regulations established under the CWA. This permit requires preparation and implementation of a Stormwater Pullulation Prevention Plan, which is intended to prevent degradation of surface and groundwaters during the grading and construction process.
- Future development affecting Waters of the U.S. or adjacent wetlands would need to fill out a permit from the U.S. Army Corps of Engineers issued pursuant to Section 404 of the Federal Clean Water Act (CWA).
- Prior to obtaining a CWA Section 404 permit, a future development may also need to obtain a water quality certification or waiver from the Regional Water Quality Control Board pursuant to Section 401 of the Federal CWA.
- Future development affecting native habitat within a streambed may need a Streambed/Bank Alteration Agreement issued by the California Department of Fish and Wildlife pursuant to Section 1600 et seq. of the California Fish and Game Code.

4.0 ENVIRONMENTAL ANALYSIS

4.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

This section discusses the possible environmental effects of the City of Ferndale Land Use and Safety Element Updates for all resource areas included in Appendix G of the CEQA Guidelines. The intention of this analysis is to identify any resource areas where a significant effect on the environment may occur as a result of the Project.

The assessment of each issue area begins with a discussion of the environmental setting related to the issue, which is followed by the impact analysis. In the impact analysis, the first subsection, identifies the methodologies used and the "significance thresholds," which are those criteria adopted by the City and other agencies, universally recognized, or developed specifically for this analysis to determine whether potential effects are significant. The next subsection describes each impact of the Project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is separately listed in bold text with the discussion of the effect and its significance.

Following each environmental impact discussion is a list of mitigation measures (if required) and the residual effects or level of significance remaining after implementation of the measure(s). In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact.

ESTABLISHING A BASELINE

The baseline for any proposed project under CEQA review is generally considered to be the environmental conditions within the project area at a specified time prior to implementation of the project. The State CEQA Guidelines Section 15125 provides the following guidance for establishing the baseline:

> "An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

For this analysis, the baseline is considered the existing conditions at the time the Notice of Preparation was received by the State Clearing House (February 8, 2023). Potential impacts caused by the Project will be identified by comparing expected environmental conditions after Project implementation to conditions as they existed in February 2023.

STATEMENTS OF SIGNIFICANCE

A "significant effect" as defined by the CEQA Guidelines §15382 is:

". . . substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

The various levels of significance used in this document are as follows:

- Significant and Unavoidable. An impact that cannot be reduced to below the threshold level by means of reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the Project is approved per Section 15093 of the CEQA Guidelines.
- Less than Significant with Mitigation Incorporated. An impact that can be reduced to below the threshold level given reasonably available and feasible mitigation measures. Such an impact requires findings under Section 15091 of the CEQA Guidelines.
- Less than Significant. An impact that may be adverse but does not exceed the threshold levels and does not require mitigation measures. However, mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- No Impact. The Project would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

MITIGATION MEASURES

CEQA requires public lead agencies to impose feasible mitigation measures as part of the approval of a "project" in order to substantially lessen or avoid the significant adverse effects of the project on the physical environment. CEQA Guidelines Section 15370 defines "mitigation" as:

- Avoiding the impact altogether
- Minimizing the impact by limiting its degree or magnitude
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environmental resource
- Reducing or eliminating the impact over time, through actions that preserve or maintain the resource, and
- Compensating for the impact by replacing or providing substitute resources or environmental conditions, including through permanent protection of such resources in the form of conservation easements.

When imposing mitigation, lead agencies must ensure there is a "nexus" and "rough proportionality" between the measure and the significant impacts of the project (CEQA Guidelines §15126.4, subd. (a)(4)(A)–(B), citing Nollan v. Ca. Coastal Commission (1987) 483 U.S. 825, Dolan v. City of Tigard (1994) 512 U.S. 374). All mitigation must be feasible and fully enforceable, and all feasible mitigation must be imposed by lead agencies (CEQA Guidelines, §15041). However, if any suggested mitigation is found to be infeasible the lead agency must explain why and support that determination with substantial evidence, presented in their findings and a statement of overriding considerations (CEQA Guidelines, §§15091 and 15093) (AEP, 2020).

POTENTIAL IMPACTS IN THE PLANNING AREA

As discussed under Section 3.3: General Characteristics of the Planning Area, the Planning Area extends a half mile beyond the jurisdictional boundary of the City. While there is no intention to extend the City's Sphere of Influence or boundary in the foreseeable future, increased density within the City may have secondary impacts on the surrounding area. As such, the Planning Area will be considered throughout this document.

4.2 AESTHETICS

This section analyzes the impacts to aesthetics including impacts to scenic vistas, scenic resources visible from a state scenic highway, visual character and quality, and impacts arising from the possible introduction of new sources of light and glare within the City of Ferndale due to the Project. This section incorporates information and analysis from the 2019 City of Ferndale Housing Element Initial Study (IS) and Negative Declaration (ND) as well as the 2012 Historical & Cultural Resources Element as they apply to the proposed Project. It also references a 1993 National Registry of Historic Places Registration Form for the Ferndale Main Street Historic District.

ENVIRONMENTAL SETTING

DEFINITIONS

Scenic Resources – Scenic resources are vital visual assets that contribute significantly to a community's identity. These resources encompass various elements such as landforms, trees, water features, and the built environment, as long as they enhance and define the visual character of a landscape. Natural and open spaces are integral parts of scenic resources, along with architecturally significant structures that hold historic or artistic value.

Visual Quality – Visual quality refers to the overall visual impression and attractiveness of an area, which is influenced by the presence of scenic resources, both natural and built. Attributes that contribute to visual quality include variety, vividness, coherence, uniqueness, harmony, and pattern. Impacts on visual quality are perceived differently by viewers depending on their exposure and individual preferences. Different land uses, such as open spaces or commercial districts, derive value from the quality of their surroundings. In the context of this study, scenic highways designated at the regional level, historic architecture, and surrounding land features, such as expansive agricultural or open space views and forested hillsides, are considered a part of these land uses.

Viewer Sensitivity – The significance of scenic resources is closely tied to the sensitivity of viewers, which is determined by two factors: exposure and awareness. Exposure refers to the relative proximity of potential viewers to a particular project implemented under the City's Land Use Element and Safety Element, while awareness indicates the attention and focus viewers bring to the experience of the area. For instance, tourists visiting the area specifically to enjoy views of the dairy land or historic buildings are presumed to have a higher level of sensitivity to visual quality compared to commuters or workers engaged in their daily work activities.

EXISTING VISUAL CONDITIONS

The City of Ferndale located 4 miles from the Pacific Coastline and 15 miles from Eureka, California, has a rich history and unique architectural charm. Originally inhabited by the Wiyot people who utilized the lands for hunting, fishing, and gathering, Ferndale was eventually settled by a small group of Euro-American settlers in 1852. Incorporated as a city in 1893, it covers approximately one square mile of land and is renowned for its well-preserved Victorian architecture, earning it the nickname "Victorian Village." The City's historical significance is evident through its designation as a State Historic Landmark (No. 883) by the California State Parks Office of Historic Preservation in 1975, as well as its inclusion of Ferndale's Main Street Historic District on the National Register of Historic Places since 1994. Ferndale is also home to the Humboldt County Fairgrounds, where an annual fair and various other events take place.

Situated on the southern edge of the expansive Eel River floodplain, Ferndale offers a picturesque setting. The floodplain itself widens to approximately two miles near the Pacific Ocean and features flat agricultural lands, commonly utilized for grazing, providing sweeping open vistas surrounding the City. South of the City, hilly terrain adds diversity to the landscape, offering ridge and valley landscapes and some timber production in the southeast.

The City's topography is generally flat except for small portions adjacent to the hill areas to the south such as those around Firemen's Park. When traveling on roadways outside the city center, the views primarily consist of vast rural lands, comprising crop fields and grazing pastures.

The information provided below presents an analysis of the current visual conditions in select locations within the Planning Area that possess high visual quality.

Designated Historic District

Buildings from Shaw Avenue to Eugene Street showcase the architectural evolution through two notable periods: the late 19th-century Victorian era, spanning from 1880 to 1890, and the early Modern period of the 20th century, from 1920 to 1936. Among the architectural styles, the Eastlake-Stick style buildings designed by Architect T.J. Frost stand out as prominent examples. Additionally, the Ferndale Main Street Historic District showcases a blend of Italianate, Queen Anne, Neo-Classic, Bungalow, and Mission styles. This historic district includes 39 contributing buildings of architectural significance. Adding to its charm, the district also features a remarkable focal point, the iconic Town Clock, further enhancing its historical and cultural value (National Park Service 1993).

Figure 4.2-1: Example View of Historic District on Main Street looking South from Brown Street intersection



Agricultural/Open Lands

Ferndale has a rich history rooted in agriculture, having served as a prominent creamery region in California. This agricultural heritage has shaped the community's identity and garnered a strong desire among residents to preserve and safeguard this defining regional characteristic. The expansive open pasturelands that envelop the City contribute to its rural ambiance and foster a deep connection between residents and the land. Even within the City limits, agricultural activities persist, including food production, grazing, and hay production. The fertile

lands of the Eel River valley and floodplain provide ample opportunities for agricultural pursuits. The surrounding coastal areas are predominantly dedicated to agriculture, and the economic prosperity of the Ferndale area remains closely intertwined with the success of dairy and other agricultural operations in the Ferndale bottoms. The resilience and prosperity of the agricultural sector have a significant impact on the overall well-being of the community.

Figure 4.2-2: Example View of Expansive Open Space and Agriculture Surrounding the City of Ferndale from Russ Park looking Northwest



Source: City of Ferndale Website

Forested Areas

While a significant portion of the City is characterized by its flat and fertile landscape, there is a notable area to the south that encompasses the Wildcat Hills. This region is densely forested and is home to Russ Park, a bird sanctuary and forest reserve entrusted to the City for the conservation of its natural resources. Adjacent to the park is approximately 50 acres of privately-owned forested land designated as Agricultural Exclusive.

Figure 4.2-3: Example View of Forested Areas from Firemen's Park looking South



SCENIC CORRIDORS

In 1963, the California Scenic Highway Program was established by the State Legislature through Senate Bill 1467 (Farr). This bill recognized the significant impact that scenic highways could have on enhancing the enjoyment of residents and stimulating the growth of the recreation and tourism industries. The legislation acknowledged that the economy of many areas in the state relies on these industries, making the development of scenic highways a crucial aspect of promoting economic prosperity and fostering a thriving tourism sector. The Department of Transportation (Caltrans) manages the State Scenic Highway Program and there are no designated scenic highways in or near the City currently.

LIGHT AND GLARE

Primary sources of light in Ferndale are lampposts, parking lot lighting, and automotive headlights. The historic style architecture found in the City provides low levels of glare and ambient light. Surrounding agricultural land also have low levels of light as outdoor lighting can be used during business hours with the exception of outdoor lighting used for security purposes which are required to be directed downward and shielded so as not to illuminate adjacent residences.

REGULATORY SETTING

FEDERAL

The National Historic Preservation Act of 1966, administered by the National Park Service based on the Secretary of the Interior's standards for the protection and preservation of historic places, established a formal process and institutions to protect and preserve resources of national importance.

STATE

Scenic Highway Program

The California Legislature established the Scenic Highway Program in 1963 to safeguard and maintain the visual appeal of highway corridors by preventing changes that would diminish the aesthetic value of the surrounding

lands. The laws governing this program can be found in the Streets and Highways Code, specifically in Section 260 et seq. The State Scenic Highway System comprises a list of highways that are either eligible for designation or have already been designated as scenic highways, as outlined in Section 263 of the Streets and Highways Code.

The designation of a highway as scenic depends on several factors, including the extent of natural landscape visible to travelers, the scenic quality of the landscape, and the level of development that interferes with the traveler's enjoyment of the view. When a city or county proposes an eligible highway for official designation, it must define the scenic corridor of the highway. The scenic corridor encompasses the land generally located adjacent to the highway and visible from it. The selection of a reasonable boundary is based on the motorist's line of vision, typically extending to the distant horizon.

It's important to note that the corridor protection program does not prohibit development but rather encourages high-quality development that preserves the scenic value of the corridor. The nominating agency, which holds jurisdiction over the area, must also establish ordinances or document existing regulations that ensure the preservation of the scenic quality within the corridor. These ordinances constitute the scenic corridor protection program. Additionally, county roads can also be included in the State Scenic Highway System. To obtain official designation, the county must follow the same process required for the designation of State Scenic Highways.

According to the latest list of designated scenic highways under the California Scenic Highway Program by Caltrans, there are no officially designated or proposed scenic highways in or around the City.

REGIONAL AND LOCAL

Design Guidelines

Ferndale's Design Review Committee oversees development proposals within the City. The utilization of the City's Zoning Ordinance and the issuance of Design Review Permits ensure that commercial and residential development meet basic design criteria. Design review procedures are intended to promote orderly and harmonious development in the City, including the protection and enhancement of its visual resources. The development of new housing units in the City would require permitting though the City Planning Department and all construction dealing with historical buildings must take place pursuant to the City's Adopted California Historical Building Code as outlined in the City of Ferndale's Building Inspector and Construction Code Ordinance. This will ensure that the historic visual character of the City is maintained and that any development would be in keeping with the City's historic aesthetic.

City Zoning Code

There are several ordinances within the City of Ferndale Zoning Code pertaining to regulation of building size and materials as well as ordinances that regulate lighting conditions to maintain the character of the community. For instance, under §5.02-§5.06, development of homes constructed or placed within the City of Ferndale in a variety of residential zones must meet specific size and building requirements such as specific exterior siding and roofing material so as to make the construction congruent with the existing City aesthetics. Additionally, §5.09.3: h. regulates permitted hours and direction of outdooring lighting in the Agricultural Services Commercial Zone.

General Plan Consistency

According to California state law, every city is required to have an adopted General Plan consisting of policies, programs, and diagrams organized into "Elements" intended to serve as long-term planning documents. These elements establish policies and programs that inform the City's planning decisions, typically covering a span of twenty years to accommodate existing and future development. While the Housing Element was updated in 2019, the Noise & Air Quality Elements was updated in 2016, and the Historical & Cultural Resources Element was

updated in 2012, the remaining elements, such as the Land Use Element and Safety Element being evaluated in this report, have not undergone recent updates. Although each element functions independently, they are interconnected and mutually supportive. Many goals and policies within each element may also tackle issues that are central to other elements. This comprehensive approach ensures a cohesive foundation for the execution of plans and programs, facilitating the realization of community objectives.

Seeing as there are areas of proposed policies involving residential land use rezoning and new mixed-use development, the Land Use Element and Safety Element will need to be consistent with the Housing Element. The Housing Element serves as a policy framework rather than a mechanism for granting zoning or land use approvals for new housing construction or modifications to the General Plan's land use regulations. The goals, policies, and programs outlined in the Housing Element are specifically designed to encourage and facilitate the development of housing within the City. By promoting the production of housing, the Housing Element aims to meet the needs of the community and ensure a diverse range of housing options for residents.

The Historical & Cultural Resources Element also addresses new developments. The purpose of this element is to preserve and enhance the community's historic resources for heritage tourism, economic development and a continued source of community identity and pride. This includes ensuring compatibility of new developments with existing historic resources as well as the stewardship of both private and public historical resources.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to aesthetics from implementation of the Project would be significant if it would:

a) Have a substantial adverse effect on a scenic vista;
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
c) In non-urbanized areas, substantially degrade existing visual character or quality of public views of the site and its surroundings, or, if the Project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality; or
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Assessments of aesthetic impacts involve a qualitative analysis that is subjective but guided by the aforementioned principles. Reactions to aesthetic conditions can vary widely based on individual tastes and interests. It is important to note that the Project in question pertains to updates of the General Plan and not a specific development proposal. Consequently, this analysis primarily focuses on a general examination of the aesthetic impacts in Ferndale. Key considerations include the arrangement of built spaces in relation to open spaces, the density and intensity of development, and how new developments visually harmonize with the existing landscape that characterizes the area. The evaluation of impacts on visual character or quality resulting from the development facilitated by the Ferndale Land Use Element and Safety Element is made with reference to the visual conditions expected upon reaching full buildout.

PROJECT IMPACTS AND MITIGATION

Impact AES-01: Would the Project have a substantial adverse effect on a scenic vista?

Finding AES-01: Development facilitated by the Project may impact scenic vistas; however, compliance with City of Ferndale's proposed goals and policies, Ferndale city code, and the City's design guidelines would ensure that new development does not have a substantial adverse effect on scenic vistas. Anticipated impacts would be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.3 – Design Standards • Policy LU-1.4 – Residential Infill • Policy LU-1.7 – Planned Development
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.2 – Tourism and Resident Services • Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.4 – Light Industrial Uses • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities • Policy LU-2.6 – Existing Commercial Areas Revitalization • Policy LU-2.7 – Increase Residential Uses
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.4 – Francis Creek Corridor • Policy LU-3.5 – Forest Lands Preservation
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation
Safety Element	Goal 2	• Policy 2.8
Safety Element	Goal 4	• Program 4.c

A scenic vista refers to a visually captivating view observed from a public location, such as a roadway or designated scenic viewing spot, that possesses a sense of expansiveness and/or holds significant importance. Roadway views outside the City center typically showcase flat rural landscapes comprising crop fields and grazing pastures. Although the City of Ferndale's topography is predominantly flat, there are exceptions in the hilly southern region of the City. The area around Firemen's Park, for instance, provides elevation and has a sweeping perspective of the surrounding landscape and City below. An adverse effect would arise if the development facilitated by the City of Ferndale's Land Use Element and Safety Element were to obstruct or harm the integrity of these scenic vistas.

The Land Use Element involves the reclassification of several land use designations within the City, which would lead to a shift in the intensity of development. Consequently, there is a potential impact on the scenic vistas that currently provide enjoyment from different viewpoints throughout Ferndale. However, it is important to note that

the development facilitated by the City of Ferndale's Land Use Element and Safety Element is primarily anticipated to focus on infill development, targeting underutilized parcels in the City. This approach aims to maximize existing space and minimize encroachment upon the natural landscapes and scenic viewpoints.

Commercial development within the City of Ferndale's historic district is subject to strict adherence to the City's comprehensive design guidelines. These guidelines outline specific criteria aimed at minimizing any negative effects on the historic characteristics of the City's architecture and surrounding areas. Policy LU-1.7 encourages the use of Planned Development zoning in areas of special interest to the City that could support a range of housing types and community amenities. Similarly, residential development must comply with the City's zoning and development standards, which include regulations on setbacks, height, and density. These standards are in place to lessen potential conflicts between land uses and to minimize visual impacts. In addition, to preserve the historical and rural character of the City, the Land Use Element and Safety Element propose the development of new housing mainly in areas already designated for residential purposes. Therefore, new development is anticipated to resemble existing development and it is unlikely that future proposed development would adversely affect a scenic vista.

The proposed goals and policies of the City of Ferndale's Land Use and Safety Elements support preserving the City's historic architectural character and protecting the scenic beauty of forested hillsides and open spaces. By complying with the City's design guidelines and zoning standards, as well as adhering to the proposed goals and policies of the Ferndale Land Use Element and Safety Element, any development facilitated by the program would not have a substantial adverse impact on the scenic vistas within the City. As a result, the impact would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AES-02: Would the Project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Finding AES-02: The Project would have no impact on scenic resources visible from a state scenic highway.

As there are currently no officially designated state scenic highways within or near the City, the proposed Project would not result in substantial damage to scenic resources, including trees, rock outcroppings, and historic buildings that are visible from such highways. Consequently, the Project would have no impact.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AES-03: Would the Project, in non-urbanized areas, substantially degrade existing visual character or quality of public views of the site and its surroundings? If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

Finding AES-03: Implementation of the Project would facilitate infill development through rezoning and changes to land use. Scenic quality would be protected through adherence to City design guidelines, Ferndale city code, and implementation of Ferndale's Land Use Element and Safety Element proposed goals and policies that address visual quality. Impacts would be less than significant.

Ferndale contains primarily residential and commercial land use designations. The residential land use designations within the City primarily focus on providing dwelling units as their primary use, catering to a wide range of housing types, sizes, and tenure options. These designations span across varying density levels, from low to high density, ensuring a diverse mix of housing options to meet the needs of the community. Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill • Policy LU-1.7 – Planned Development
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.2 – Tourism and Resident Services • Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.4 – Light Industrial Uses • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities • Policy LU-2.6 – Existing Commercial Areas Revitalization • Policy LU-2.7 – Increase Residential Uses
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.3 – Manage Flood Plains
Land Use Element	Goal LU-4	• Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation
Land Use Element	Implementation Programs	• LU-IP2: Zoning Code Updates • LU-IP7: Open Space Action Program
Safety Element	Goal 1	• Policy 1.1
Safety Element	Goal 2	• Program 2.g
Safety Element	Goal 4	• Program 4.c

Ferndale's Land Use and Safety Element proposed policies support development that would be visually consistent with the City's historic architectural character and protect the scenic resources of the surrounding forested hillsides and open spaces. Development throughout the City would largely be infill projects on undeveloped or underutilized sites and would be subject to specifically proposed goals and policies such as LU-1.4, LU-1.7, LU2.1, LU2.3, LU2.6, and LU-4.3 which are intended to maintain and improve the visual character of the City in infill areas.

Development under the Land Use Element and Safety Element would also adhere to LU2.5 in addition to the City's existing applicable design guidelines.

New development over the planning period would resemble existing development and would, therefore, not substantially degrade the existing visual character or quality of public view. Applicable zoning and other regulations governing scenic quality are not anticipated to be substantially modified in ways that would substantially degrade the existing visual character of the City. All development would be in compliance with applicable zoning and other regulations governing scenic quality. Therefore, a less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AES-04: Would the Project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Finding AES-04: Development facilitated by the Project and construction associated with development would introduce new sources of light and glare. With adherence to existing ordinances that regulate light and glare for new development, impacts would be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.3 – Design Standards
Land Use Element	Goal LU-2	• Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities

The proposed policies and goals outlined in the Land Use Element and Safety Element aim to foster the development of new housing units, mixed-use areas, and community amenities within the City. New development would be similar to existing development and would incorporate policies such as LU-1.2 that seeks to create safe, clean, and pedestrian-friendly streetscapes and public spaces through design and active maintenance, including thoughtful consideration of lighting for community amenities consistent with the current City standards.

In the context of this analysis, light refers to the emission of brightness generated by a light source. Stationary sources of light encompass lampposts, exterior parking lot lighting, and building security lighting, while moving sources of light include the headlights of vehicles traveling on roadways near the Project site. On the other hand, glare is characterized as concentrated and intense light emitted directly from a source or indirectly through light reflecting from a surface. During daytime, glare predominantly occurs when sunlight illuminates highly reflective surfaces at or above eye level. Such reflective surfaces can be found on buildings with polished or glass exteriors, light-colored pavements, and the windshields of parked cars.

The City of Ferndale, being primarily a rural community with historic architectural heritage, experiences minimal levels of ambient light from both stationary and moving light sources. The traditional architectural style prevalent in the City features structures that do not incorporate large expanses of metal or windows, resulting in reduced levels of glare and ambient light. The existing lighting within the City is mainly provided by lampposts, parking lot lighting, and automotive headlights, contributing to the overall lighting conditions.

During the construction phase of new housing units and community amenities, temporary lights and glare may be generated by equipment and security lighting. Furthermore, the installation of outdoor security lighting may accompany the new housing units. Outdoor lighting and window modifications will adhere to the established standards set by the City, such as shielded and directional lighting that is adequate for safety, but not overly bright.

Development facilitated by the Project will be guided by the existing City design guidelines related to lighting and building standards. Although new light would be visible as compared to existing conditions, the new light sources within this planning period are not considered substantial given development would be primarily within existing developed areas in the City footprint. Therefore, potential impacts on both day and nighttime views would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

National Park Service. 1993. "National Registry of Historic Places Registration Form." Ferndale. Accessed June 6, 2023. https://npgallery.nps.gov/NRHP/GetAsset/NRHP/93001461_text.

4.3 AGRICULTURAL AND FOREST RESOURCES

This section summarizes agricultural and forestry resources in the Planning Area and analyzes the potential impacts of Project implementation related to agricultural and forestry resources. This section incorporates information and analysis from the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, the Humboldt County 2017 General Plan, and Humboldt County GIS data.

ENVIRONMENTAL SETTING

DEFINITIONS

Agricultural Lands – The California Department of Conservation (DOC) defines agricultural lands as lands that are used for the commercial production of food, fiber, or other plant or animal products. These lands are typically engaged in farming, ranching, or similar agricultural activities and are vital for sustaining California's agricultural industry.

Prime Farmland – Prime farmland as established by the DOC is land that possesses the best combination of factors such as soil quality, climate, water supply, growing season, and topography for sustained, high-yield agricultural production. Prime farmland should not be saturated with water for a long period of time and is either protected from flooding or does not frequently flood. It is land that is particularly well-suited for various types of farming, including the cultivation of crops and the grazing of livestock.

Farmland of Statewide Importance – Farmland of Statewide Importance shares similarities with prime farmland as it possesses a favorable blend of physical and chemical attributes conducive to crop production. However, it may have minor deficiencies, such as steeper slopes or less moisture-retaining soil, and is of statewide importance for the production of food, feed, fiber, and other goods. A crucial requirement is that this land must have been actively utilized for irrigated crop production during at least two of the update cycles preceding the mapping date established by the DOC.

Grazing Land – Land currently covered in vegetation suitable for livestock grazing.

Unique Farmland – Unique farmland refers to land characterized by less fertile soils yet strategically employed for cultivating specific, economically valuable crops. It possesses a unique blend of factors such as soil quality, location, growing season, and moisture supply, essential for consistently yielding high-quality or high-yield crops when cultivated and managed in accordance with contemporary farming techniques. While it often requires irrigation, certain climatic zones in California may support non-irrigated orchards or vineyards. Notable examples of crops grown on such land include oranges, olives, avocados, rice, grapes, and cut flowers.

Urban and Built-up Land – Land characterized by a building density of at least 1 unit per 1.5 acres, which roughly equates to approximately 6 structures within a 10-acre parcel.

Forest Land – Land that under natural conditions can sustain a minimum of 10 percent native tree cover, encompassing a diverse array of tree species, including hardwoods. This land designation facilitates preservation or management of forest-related resources such as timber, aesthetic value, fish and wildlife, biodiversity, water quality, recreational facilities, and other public benefits, as delineated in the California Public Resources Code (PRC) Section 12220(g).

Timberland – Land that is not federally owned or designated by the State Board of Forestry and Fire Protection (Board) as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial

species used to produce lumber and other forest products, including Christmas trees. The classification of commercial species is established by the Board on a district-by-district basis (PRC Section 4526(g)).

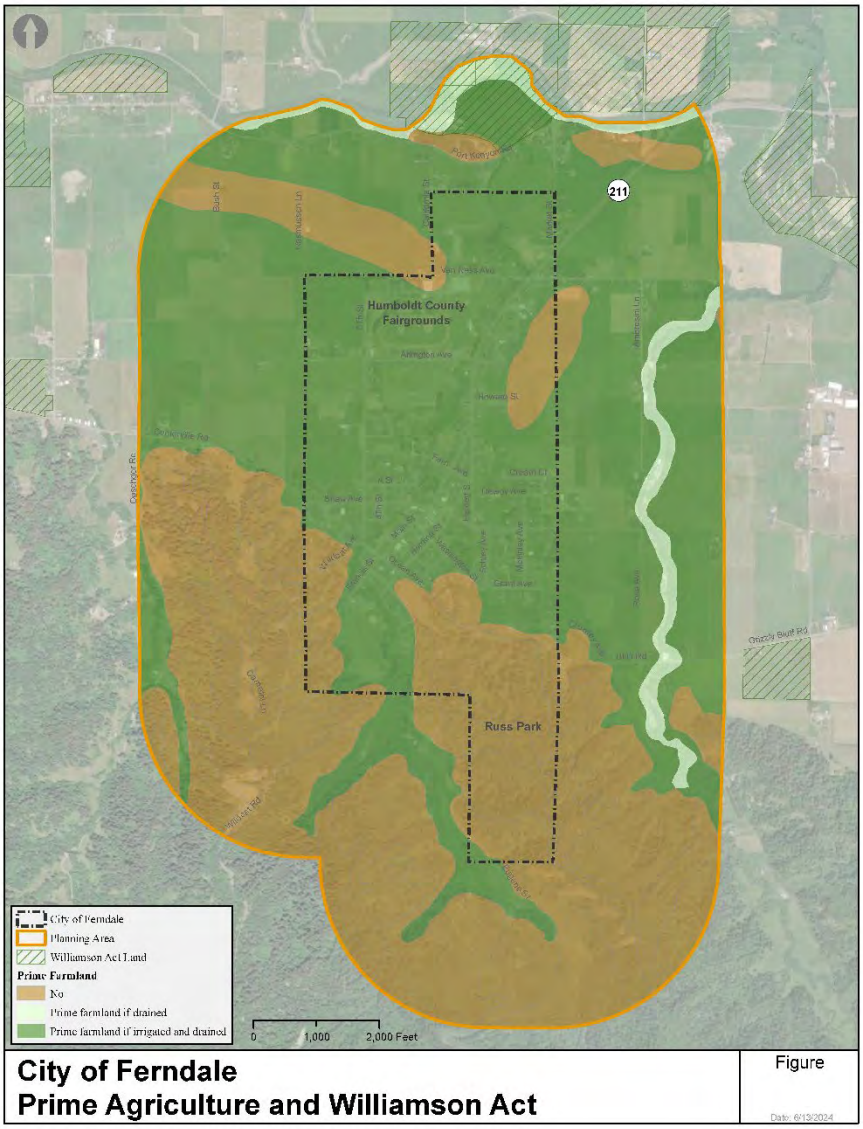
Timberland Production Zone – Timberland production zones or "TPZ" are areas devoted to and used for growing and harvesting timber, or alternatively, for the cultivation and harvesting of timber along with compatible activities pursuant to CGC Section 5112 or 5113 and defined in subdivision (h) (CGC Section 51104).

CURRENT SETTING

Agriculture

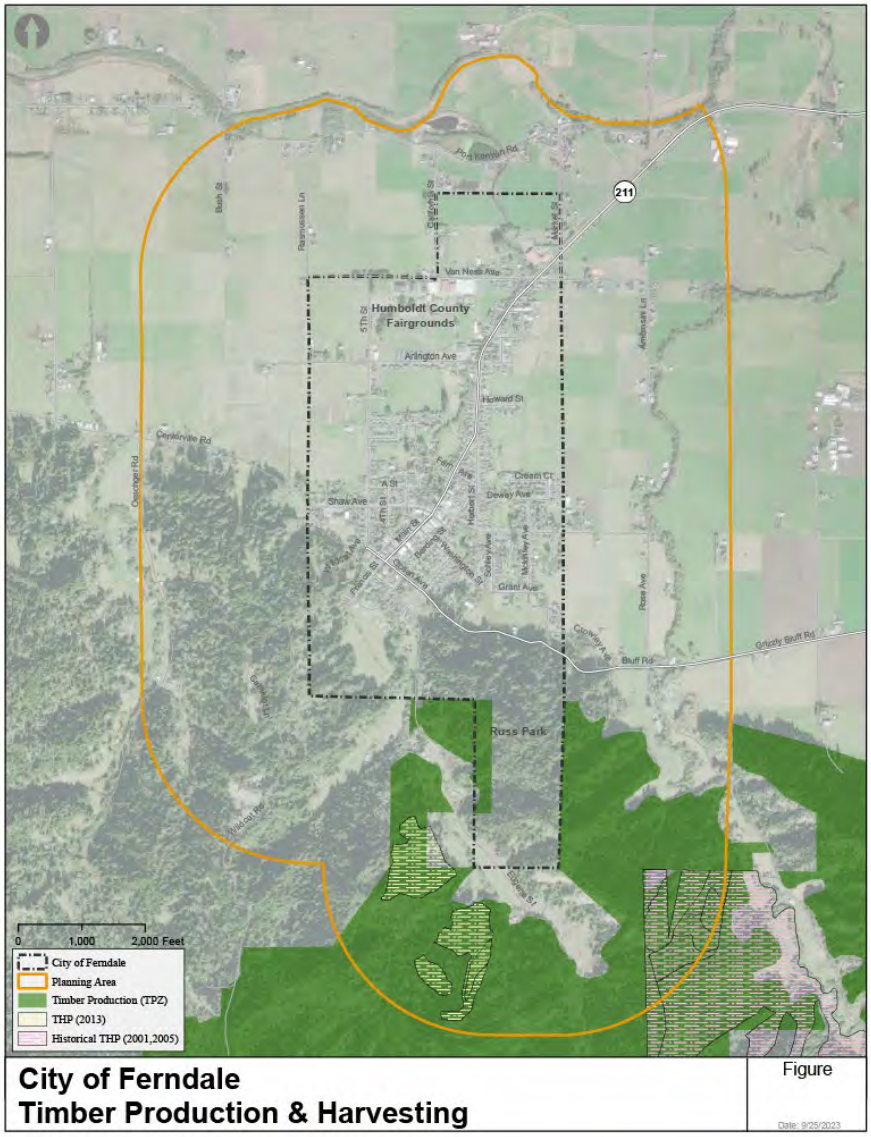
Ferndale is located within the Eel River Valley and just above the flood plain which is generally comprised of highly productive soil that is well suited for agriculture. The geography features flat lowlands to the north of the City and the Wildcat Hills lying adjacent to the City in the south. Much of the area in the vicinity of Ferndale has a long history of coastal agricultural uses and one of the economic drivers of the area remains linked to the success of the dairy industry and other agricultural operations in the region. The president of the Western Organic Dairy Producers Alliance has said that the area surrounding Ferndale had 39 organic dairy farms and one conventional dairy in 2023, ranging from 100 to 1500 milking head (Scully, 2023). Agriculture is a defining characteristic in the region that community members have an expressed desire to maintain and protect.

Figure 4.3-1: Ferndale's Agricultural Resources



Although Humboldt County land is not mapped by the California Department of Conservation Farmland Mapping and Monitoring Program, the City is surrounded predominantly by soil that would qualify for designation as prime agricultural land if irrigated and drained. Within City boundaries, there are 218 acres of Agricultural Exclusive (AE) zoned land which comprise 31 percent of the total land use. There are also parcels north of City boundaries but within the Planning Area enrolled in the Williamson Act. Agricultural activity within the City is limited and primarily consists of orchards, feed crops, and individual lot-based food production and animal husbandry.

Figure 4.3-2: Ferndale's Forestry Resources



Forestry

South of Ferndale, there are steep forest lands and the rolling hills of the Francis, Reas, and Williams Creek watersheds. These watersheds have historically been used for upland cattle and timber production. The steep sloped hills located in the southern planning area are covered with coniferous forest and understory that extend beyond the Planning Area. Areas outside of the City boundaries to the south contain Humboldt County designated TPZ. There are also areas in the southern Planning Area that were included in CalFire Timber Harvesting Plans (THP) from 2001, 2005, and 2013 (CAL Fire, 2023).

REGULATORY SETTING

FEDERAL

Agricultural Conservation Easement Program

The Agricultural Conservation Easement Program (ACEP) protects working agricultural lands and wetlands while limiting non-agricultural land uses. This program was established in 2014 through the Farm Bill and consolidates three former USDA-NRCS programs: the Wetlands Reserve Program, Grassland Reserve Program, and the Farmland Protection Program, formerly known as the Farm and Ranch Land Protection Program (Georgia Soil and Water Conservation Commission, n.d.). By consolidating these programs, the ACEP can assist Tribes, state and local governments, and non-governmental organizations with establishing agricultural land easements to prevent the conversion of productive working lands to non-agricultural uses. The ACEP creates Agricultural Land Easements (ALE) and Wetlands Reserve Easements (WRE) (Natural Resources Conservation Service, n.d.-c). ALEs protect croplands and grasslands on working farms and ranches through establishing conservation easements. WREs help private and tribal landowners protect and restore wetlands that have been degraded from agricultural practices.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FFPA) is implemented by the Natural Resources Conservation Service (NRCS). The NRCS serves as the United States Department of Agriculture's (USDA) primary private lands conservation agency. FFPA, passed in 1981, aims to minimize the federally-aided conversion of farmland to nonagricultural uses and ensures, to the extent possible, that federal programs are compatible with state, local, and private programs to protect farmland (National Resources Conservation Service, n.d.-a). Through FFPA, farmland refers to and includes prime farmland, unique farmland, and land of statewide or local importance.

At the national level, the NRCS provides leadership for conducting land evaluations and agricultural land evaluation and site assessment (LESA), reviewing federal agencies' programs and FPPA compliance, increasing FPPA awareness, reviewing FPPA activities at meetings, and reporting the effects of federally funded programs on farmland conversion to Congress on an annual basis (National Resources Conservation Service, 2013). At the state level, the NRCS reviews and approves designations of statewide and locally important farmland, evaluates FPPA provisions, assists with LESA development, and maintains a list of farmland available to field offices and the public (National Resources Conservation Service, 2013). At the field level, the NRCS assists entities receiving federal assistance with completing FPPA forms, summarizes farmland protection activities and completes annual reports, and provides clients with information to assist in the identification of farmland (National Resources Conservation Service, 2013).

Land Evaluation and Site Assessment

The Land Evaluation and Site Assessment (LESA) system is a method of evaluating land for soil productivity or soil potential ratings, land capability classification, and soil survey interpretations. LESA is used to designate a farmland conversion impact rating score on proposed areas with federally funded and/or assisted projects for FPPA (Natural Resources Conservation Service, n.d.-b). LESA provides context and necessary information to allow officials to make informed decisions about land use. The land evaluation portion of LESA includes rating soils on a variety of factors and categorizing them into groups of best to least suited for certain agricultural uses. Each group is then relatively valued. For the site assessment segment of LESA, three main areas are assessed: non-soil factors that relate to a site's agricultural use, development pressure factors, and other public values of a site. Each factor is assigned a range of values which are based upon local needs and goals which informs rational land use decisions. There are many versions of LESA, including the California LESA model which is covered below.

STATE

California Land Evaluation and Site Assessment Model

The California LESA Model formulation is a result from Senate Bill 850 to provide lead agencies with methodology to ensure that the effects of agricultural land conversion are consistently considered in the environmental review process of CEQA (California Department of Conservation, 1997). The California LESA Model was designed based on the federal LESA system and considers land evaluation factors of soil-based land quality as it relates to agricultural suitability and site assessment factors of social, economic, and geographic attributes that contribute to agricultural land value. The model evaluates, rates, and weights numerous factors and measures to calculate a score and determine if the conversion of agricultural property would have significant environmental effects under CEQA. The model considers the following factors: land capability, Storie index soil rating system, water availability (during both drought and non-drought conditions), land uses within one-quarter mile of the property, and "protected resource lands" (e.g., Williamson Act lands) surrounding the property.

Cortese–Knox–Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 is a state law that establishes procedures and regulations for changes of organization within local government entities, including incorporations, annexations, dissolutions, and consolidations. The Act aims to ensure transparency and accountability in local government reorganization decisions. Under the Act, Local Agency Formation Commissions (LAFCos) were established in each California county and have powers to act on local agency boundary changes and encourage the formation and development of local agencies. LAFCos were put in place to help discourage urban sprawl, preserve open-space and prime agricultural lands, and efficiently extend government services. Humboldt LAFCo is a response agency for agricultural lands in Ferndale and as such, definitions of agricultural land and prime agricultural land as defined by LAFCo are used in this assessment.

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) is administered by the DOC and has been documenting changes in agricultural land use since 1984. The FMMP system was designed to document how much agricultural land is being converted to nonagricultural land or being transferred into Williamson Act contracts. The FMMP is responsible for preparing and updating Important Farmland Series Maps and maintains an automated map and database system to show agricultural land changes. This system is updated every two years on even numbered years. When preparing the Important Farmland Series Maps, the DOC takes consideration of all information regarding the amount of land converted to or from agricultural use. The changes to these maps are shared with counties throughout the state. Any requests for discrepancy or error corrections, with land use or irrigation status evidence, are addressed by the DOC. Other sources besides counties may provide information regarding land use, but the DOC does not discuss map designation changes with any entity besides state counties (California Department of Conservation, n.d.-b).

Assembly Bill 2881 – Right-to-Farm Disclosure

AB2881, effective January 2009, requires land sellers and agents to disclose if property in a real estate transaction is located within one mile of farmland. The most recent Important Farmland Map is utilized to determine the proximity of the property to farmland. If the property is within one mile of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and/or Grazing Land, then the land sellers and agents are required to disclose this.

California Farmland Conservation Program Act

The California Farmland Conservancy Program Act of 1995, also known as Senate Bill 1142, created the California Farmland Conservancy Program (CFCP). The CFCP is a grant program that establishes agricultural conservation easements and land improvement projects. The CFCP supports these local efforts for the purpose of preserving agricultural land resources and to foster sustainable agricultural uses. The agricultural conservation easements established by the CFCP protect agricultural lands under threat of conversion to nonagricultural uses by creating permanent conservation easements. The land improvement grants are applied if the improvement will directly benefit the land, under the stipulation that the land must be currently protected by a conservation easement or a similar long-term agreement. The Director of the California Department of Conservation (DOC) determines if a similar long-term agreement is adequate for land improvement grant approval.

Sustainable Agricultural Lands Conservation Program

The Sustainable Agricultural Lands Conservation (SALC) Program provides grants for three project types: Land Use Planning, Agricultural Conservation Acquisition, and Capacity and Project Development. It aims to support the conservation of agricultural land, economic growth, and sustainable development. Under the California Strategic Growth Council (SGC) and DOC, the program purchases conservation easements, develops agricultural land strategy plans, and engages in other actions to result in reducing greenhouse gases and increasing agricultural resiliency (California Department of Conservation, n.d.-c).

Williamson Act

The Williamson Act, also known as the California Land Conservation Act of 1965, allows local governments to enter contracts with private landowners to restrict specific parcels of land to agricultural use. Once the land is restricted, the taxation value of the land is based on agricultural income as opposed to full market value. As a result, the landowners receive much lower property tax assessments (California Department of Conservation, n.d.-a). The Act aims to preserve the agricultural land and discourage premature conversion to urban uses. The properties must remain in agricultural production for an initial 10-year period and the contract is renewed automatically for an additional 10-year contract unless the landowner files for nonrenewal. Participating counties and cities are required to establish their own regulations such as acreage minimums, allowable uses, enrollment guidelines, and other rules and procedures regarding the implementation of the Williamson Act. The Department of Conservation assists governments and landowners with interpreting the Act and publishes information for public viewing. The City of Ferndale has no land enrolled in the Williamson Act as of 2022, but the Planning Area has 47.5 acres enrolled.

California Public Resources Code

California Public Resources Code (PRC) Sections 12220(g) and 4789.2(g) and California Government Code (CGC) Section 51104(g) define forestry resources including forestland, timberland, and timberland production zones. These definitions can be found in the definitions section of this document.

Z'berg-Nejedly Forest Practice Act of 1973

The Z'berg-Nejedly Forest Practice Act authorizes the regulation of timber operations using rules for each forest district, as adopted by the State Board of Forestry and Fire Protection (Board) within the Department of Forestry and Fire Protection (CAL FIRE). The Board is mandated to protect and enhance all wildland forest resources in the State that are not under federal jurisdiction (Board of Forestry and Fire Protection, 2023). The rules laid forth by the Board are meant to be used as standards for developing Timber Harvesting Plans (THPs). The THPs must be prepared by a Registered Professional Forester and approved by CAL FIRE and other entities in advance of

beginning timber operations (University of California Press, 1982-2004). The Act provides rules specifically focusing on timber operations in proximity to streams, requiring efforts to protect streambanks. Since the Act has become effective, there have been various proposals and court interpretations that have modified the Act. In 1975, the Humboldt County Superior Court determined that CEQA provisions applied to timber operations in addition to the Act provisions (University of California Press, 1982-2004).

California Forest Taxation Reform Act

The California Forest Taxation Reform Act of 1976 (FRTA) established an alternative taxation system for timber and timberlands to the system of property tax. The FRTA provides for a timber "yield" tax, which is applied to the timber's value at the time of harvest for private and public lands. This yield tax rate is adjusted annually based on the percentage change in the countywide average tax rate in the counties most dependent on property tax revenues from timber (Assembly Revenue and Taxation Committee, 1979). This rate structure aims to change the yield tax burden in proportion to tax burden changes on rural property owners.

Timberland zoned within a timberland preserve zone, later renamed to timberland production zone (TPZ), is assessed with uniform land grading rules. With respect to the general plans of local governments, "timberland preserve zone" means "timberland production zone." (Government Code §51104, 2014). The name was changed from timberland preserve zone to timberland production zone in order to emphasize the timber production intent of the legislation (Nunamaker, Rodrigues, Leblanc, & Nakamura, 2007). The TPZ is applicable for 10 years, with one year added upon renewal date of the zoning, which creates a 10-year rolling zone (Assembly Revenue and Taxation Committee, 1979). Land use in a TPZ is restricted to growing or harvesting timber or other compatible uses approved by the local government. Taxation of these TPZ timberlands is based upon these land use restrictions. If timberland zoned as TPZ is located within land under a Williamson Act contract, the Williamson Act contract is phased out and the land valuation and restrictions of the TPZ are substituted for the area.

California Timberland Productivity Act of 1982

The California Timberland Productivity Act requires that the state do the following: 1) maintain the optimum amount of timberland to ensure its present and future availability for the growing and harvesting of timber, 2) discourage premature and unnecessary conversion of timberland to urban uses, 3) discourage the expansion of urban services onto timberland, and 4) encourage the investment in timberlands based upon reasonable harvest expectations (Government Code §51102, 1982). These actions are required to provide a long-term investment in forest resources and realize the potential of forest resources. The Act also contains the main body of State statue relevant to TPZ regulations and provides the procedures for zoning and rezoning lands into and out of TPZ. The Act provides guidelines for compatible uses; through the Act, Humboldt County is charged with determining the procedural method of whether a residence might significantly inhibit the use of the property for the growing and harvesting of timber (Humboldt County, 2017).

REGIONAL AND LOCAL

Right to Farm Ordinance

In 1984, Humboldt County adopted a Right to Farm Ordinance which aims to enhance and encourage agricultural operations within the County. The ordinance limits the circumstances under which existing and planned agricultural operations may be considered a nuisance in order to reduce the loss of the County's agricultural resources. Nuisance complaints on agricultural operations discourage farm improvement investments and stunt the economic growth of the agricultural industry (Humboldt County Code §314-43, 2023). The ordinance requires sellers of real property to give notice of the ordinance's provisions to buyers adjacent to agricultural land or

operations, advising them of the potential factors of agricultural land uses that may be an inconvenience to the purchaser.

County Williamson Act Committee

At present, Humboldt County has over 273,000 acres in 145 established preserves through the Williamson Act program (Humboldt County, n.d.). In 2003, the Humboldt County Board of Supervisors (Board) established the Williamson Act Advisory Committee to provide input into the process of administering the Williamson Act in the County. The Committee also serves as an advisory committee as needed to make recommendations to the Board on Williamson Act applications, cancellations, addition applications, and program policy.

Humboldt County General Plan

The Humboldt County 2017 General Plan includes goals and policies related to rural lands, agriculture, and forest resources (Humboldt County, 2017). Relevant regulations are copied below.

RURAL LANDS GOALS, POLICIES, AND STANDARDS

RL-P1. Compatible with Resource Production. Planned development on residential agriculture lands adjacent to designated agricultural and timberlands shall be compatible with agriculture and timber production.

RL-S1. Compatibility with Timber and Agricultural Production. Residential Agriculture subdivisions adjacent to lands planned for timber or agricultural production shall be evaluated for compatibility with continued resource production. Subdivisions shall be conditioned to minimize constraints on resource production due to access limitations and water supply impacts. Right-to-Harvest or Right-to-Farm agreements shall be required on newly created Residential Agriculture subdivision lots adjacent to lands planned for timber or agricultural production.

AGRICULTURAL LANDS GOALS, POLICIES, AND STANDARDS

AG-G2. Preservation of Agricultural Lands. Agricultural land preserved to the maximum extent possible for continued agricultural use in parcel sizes that support economically feasible agricultural operations.

AG-P5. Conservation of Agricultural Lands. Agricultural lands shall be conserved and conflicts minimized between agricultural and non-agricultural uses through all of the following:

A. By establishing stable zoning boundaries and buffer areas that separate urban and rural areas to minimize land use conflicts.

B. By establishing stable Urban Development, Urban Expansion and Community Planning Areas and promoting residential in-filling of Urban Development Areas, with phased urban expansion within Community Planning Areas.

C. By developing lands within Urban Development, Urban Expansion and Community Planning Areas prior to the conversion of agricultural resource production lands (AE, AG) within Urban Expansion Areas.

D. By not allowing the conversion of agricultural resource production lands (AE, AG) to other land use designations outside of Urban Expansion Areas.

E. By assuring that public service facility expansions and non-agricultural development do not inhibit agricultural viability, either through increased assessment costs, degradation of the environment, land fragmentation or conflicts in use.

F. By increasing the effectiveness of the Williamson Act Program.

G. By allowing historical structures and/or sensitive habitats to be split off from productive agricultural lands where it acts to conserve working lands and structures.

H. By allowing lot-line adjustments for agriculturally designated lands only where planned densities are met and there is no resulting increase in the number of building sites.

AG-P6. Agricultural Land Conversion - No Net Loss. Lands planned for agriculture (AE, AG) shall not be converted to non-agricultural uses unless the Planning Commission makes the following findings:

A. There are no feasible alternatives that would prevent or minimize conversion;

B. The facts support an overriding public interest in the conversion; and

C. For lands outside of designated Urban Development Boundaries, sufficient off-setting mitigation has been provided to prevent a net reduction in the agricultural land base and agricultural production. This requirement shall be known as the "No Net Loss" agricultural lands policy. "No Net Loss" mitigation is limited to one or more of the following:

1. Re-planning of vacant agricultural lands from a non-agricultural land use designation to an agricultural plan designation along with the recordation of a permanent conservation easement on this land for continued agricultural use; or

2. The retirement of non-agricultural uses on lands planned for agriculture and recordation of a permanent conservation easement on this land for continued agricultural use; or

3. Financial contribution to an agricultural land fund in an amount sufficient to fully offset the agricultural land conversion for those uses enumerated in subsections a and b. The operational details of the land fund, including the process for setting the amount of the financial contribution, shall be established by ordinance.

AG-P13. Agricultural Zoning and Parcel Size. Utilize Agricultural Exclusive (AE) and Agricultural Grazing (AG) land use designations to ensure appropriate parcel sizes and land use for continuing availability of the necessary agricultural land base.

AG-P14. Residential Uses on Timberland Production Zone (TPZ) Lands within Agricultural Preserves. Residential uses on TPZ lands within agricultural preserves shall be consistent with the requirements of the Williamson Act and local Williamson Act Guidelines.

AG-P15. Compliance with Regulations. The County shall place a priority on abatement of violations that result in agricultural land conversion, loss of agricultural productivity or conflicts with neighboring agricultural operations.

AG-P16. Protect Productive Agricultural Soils. Development on lands planned for agriculture (AE, AG) shall be designed to the maximum extent feasible to minimize the placement of buildings, impermeable surfaces or nonagricultural uses on land as defined in Government Code Section 51201(c) 1- 5 as prime agricultural lands.

AG-S1. Subdivision of Planned Agricultural Exclusive (AE) Lands. Within areas designated AE, no agricultural land division will be approved whereby any parcel thusly created will be less than 60 acres.

AG-S5. Historical Preservation. An exception to the minimum parcel size for planned agricultural land may be made for the purposes of historic preservation where the following findings are made:

A. The site or structure qualifies and is included on a local, state or federal historic registry; and,

B. The viability of continued agricultural operations is not inhibited, and;

C. No additional density beyond what would be permitted as part of the existing agricultural operations is created.

FOREST RESOURCES GOALS AND POLICIES

FR-G2. Forestland Timber Production. A prosperous timber industry managing a stable inventory of productive forest lands for timber production. Ranches and rural homesteads making full use of the timber production potential of their lands.

FR-G3. Supply of Productive Forestlands. An adequate and stable supply of forestlands whose economic and ecosystem services are sustained by policies and standards governing minimum parcel sizes, public acquisition, incompatible uses, public infrastructure investments, environmental protection and incentives for sustainable uses.

FR-G4. Incompatible and Conflicting Uses. Timberlands protected from the encroachment of incompatible uses and managed for the inclusion of compatible uses.

FR-P6. Tax Incentive Programs. Support tax incentive programs, such as the Timber Production Zone (TPZ), that maintain or increase the economic viability of timber production. Support tax policies that provide tax benefits to landowners for conservation easements.

FR-P8. Protection of High-Quality Timberlands. Timberlands planned and zoned for timber production should be retained for timber production, harvesting and compatible uses, and reclassification of the Timberland Production Zones (TPZ) shall be done in accordance with the statutory requirements.

FR-P19. Planned Compatible Uses. Lands adjacent to areas designated as Timberlands should be planned for uses compatible with timber management, including timber harvesting activities.

City of Ferndale Zoning Ordinance 02-02

The City's Zoning Ordinance lays forth the regulations for Agriculture-Exclusive (AE) Zone. The AE Zone is intended to be "applied in fertile areas in which agriculture is and should be the desirable predominant use and in which the protection of this use from encroachment from incompatible uses is essential to the general welfare" (City of Ferndale, 2014). In these zones, no subdivisions or residential developments, whether by official map, record or survey or recorded subdivision, shall be permitted. The minimum lot area is 4 acres.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to agricultural and forestry resources from implementation of the Project would be significant if it would:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
d) Result in the loss of forest land or conversion of forest land to non-forest use; or

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

Agricultural and forestry impact assessments involved a review of data available through analysis of the Department of Conservation's FMMP maps, NRCS soils maps, aerial maps, as well as County forestland and Williamson Act Land maps provided by the County of Humboldt.

The City predominantly contains developed land where residences, businesses, and public uses exist. Some areas of undeveloped open space exist within the City, portions of which are designated or used for agriculture. Lands within the City (or County) have not been formally analyzed by the Department of Conservation to determine if they meet the criteria for being designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. In accordance with PRC Section 21060.1(b), areas that have not been surveyed and classified through the Farmland Mapping and Monitoring Program can be considered "prime agricultural land" if they meet one of the four definitions provided at Government Code Section 51201(c):

1. All land that qualifies for rating as class I or class II in the Natural Resource Conservation Service land use capability classifications.
2. Land which qualifies for rating 80 through 100 in the Storie Index Rating.
3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
4. Land planted with fruit- or nut-bearing trees, vines, bushes, or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars ($200) per acre.

Project Impacts and Mitigation

Impact AG-01: Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Finding AG-01: Although adoption and implementation of the Land Use Element may result in the development of lands that may be considered prime agricultural lands, the area is not mapped pursuant to the FMMP and the overarching benefit to agricultural resources is greater from infill development than it would be from sprawl. Therefore, the impact would be less than significant.

Humboldt County is not mapped as part of the Farmland Mapping and Monitoring Program (FMMP) and therefore does not contain the designations above. The FMMP designates lands in the following categories, from greater to lower agricultural value (as a general rule). Those designations are: (1) Prime; (2) Farmland of Statewide Importance; (3) Unique Farmland; (4) Farmland of Local Importance; (5) Grazing Land; (6) Urban and Built-Up Land; (7) Other Land; and (8) Water. Four criteria that can be used to determine prime agricultural land in areas that have not been surveyed and classified in the FMMP are listed in the methodology section above.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill
Land Use Element	Goal LU-2	• Policy LU2.1 – Commercial Infill
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.4 – Francis Creek Corridor
Land Use Element	Goal LU-4	• Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation
Safety Element	Goal 2	• Policy 2.8 • Policy 2.9
Safety Element	Goal 4	• Program 4.c

As shown on Figure 4.3-1, a majority of the City is underlain by prime agriculture soil types, however much of it would not be considered prime agricultural land due to existing development. Lands within City limits not specifically designated for agricultural use would generally be considered as Urban and Built-Up Land with limited opportunity to be used as economically viable farmland, regardless of the underlying quality of the soils. In addition, much of it would only be considered prime agricultural land if it was irrigated and drained. The City currently has 218 acres of land designated agriculture exclusive (AE) (approximately 31 percent total land area). The proposed land use designation changes would result in changing 12.95 acres (eight parcels) of agricultural designated land to low density residential (see Table 4.3-1 and Figure 4.3-3.). The proposed changes would result in a total of 205.7 acres of AE designated land in the City (29.4 percent total land area); a less than 2 percent change.

Table 4.3-1: Proposed AE Land Use Designation Changes

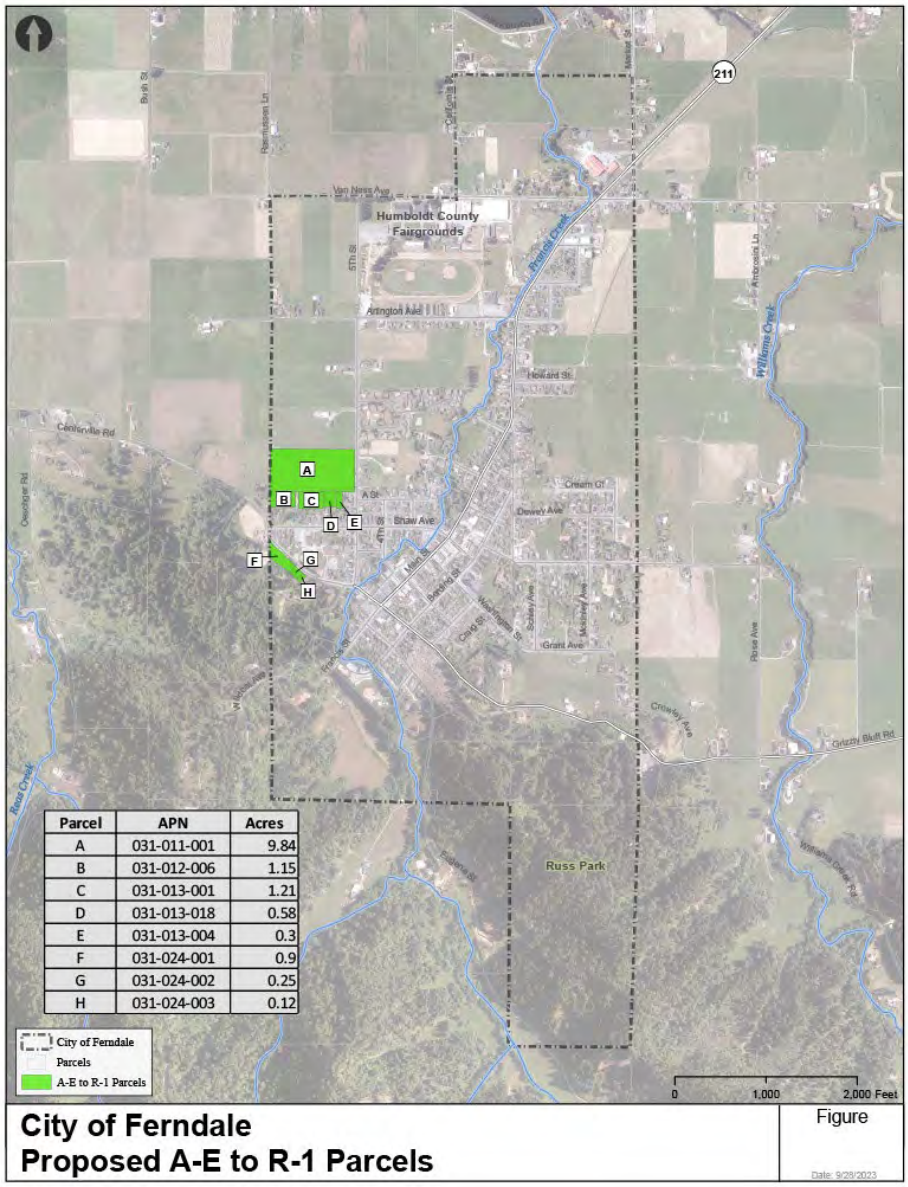
Parcel	APN	Exiting Site Use	APN Total Area (acres)	Existing Land Use/ Zoning	Proposed Land Use/ Zoning
A	031-011-001	Residential/Agriculture	9.84	AE (8.44 acres) / R1 (1.4 acres)	R1
B	031-012-006	Residential	1.15	AE	R1
C	031-013-001	Residential	1.21	AE	R1
D	031-013-018	Accessory Structure	0.58	AE	R1
E	031-013-004	Vacant	0.30	AE	R1
F	031-024-001	Residential	0.90	AE	R1
G	031-024-002	Residential	0.25	AE	R1
H	031-024-003	Residential	0.12	AE	R1

Six of these eight parcels (4.51 acres total) are already developed with residential/accessory uses, are primarily used for residential purposes, and are all less than 1.21 acres in size each. This includes parcels B, C, D, F, G, and H. Parcel E, APN 031-013-004 is a small parcel (0.3 acres) that does not meet the four-acre minimum AE lot size requirements and is surrounded on three sides by existing residential development. The re-designation of these parcels from A-E to R1 will not result in the land being converted to a non-agricultural use, but rather will serve to

accurately reflect the exiting uses of the parcels. As there would still be a substantial amount of AE designated lands within the City consistent with proposed policies, this potential conversion is considered less than significant.

Parcel A (APN 031-011-001) is 9.84 acres and is split zoned AE and R-1. It is currently developed with one single family home. The R-1 designation is adjacent to 5th Street and extends approximately 131 feet west of the road and encompasses approximately 1.4 acres. The land use designation for the remaining 8.4 acres of this parcel is proposed to change from AE to R1. The southern edge of the property is entirely bordered by small lot parcels that are largely developed with single family homes. There is also an existing right-of-way for Shaw Lane that could provide a second access point to the property.

Figure 4.3-3: Parcels Proposed to Change from an Agricultural to Residential Land Use Designation



According to the Humboldt County web GIS, the portion of this parcel proposed to change does not contain prime agriculture soils, but may meet the criteria as prime farmland if irrigated and drained. If developed, it could convert land that may meet at least one of the requirements of the four prime agricultural land criteria listed in the methodology section above, to residential use, although as noted above this parcel is not mapped as prime farmland in the FMMP. Although development under the proposed Land Use Element has the potential to result in development of prime agricultural land using this definition in absence of FMMP mapping, the City's plan to prioritize development within the City boundary would preserve agricultural land and other natural resources outside of City limits. The potential impact to agricultural resources is greater when implementing development goals that do not prioritize infill development, such as urban sprawl. Lands outside of City limits are currently utilized for and are highly suitable for agricultural production and would potentially be threatened by sprawl development.

Under the proposed Land Use Element, sprawl is discouraged through adoption of the policies LU-1.4 – Residential Infill, LU-3.1-Conservation, and LU-4.3 Agricultural Use Preservation, which preserves rural and agricultural lands at the edges of and surrounding the City. Together, these policies promote infill over expansion and the preservation of agricultural lands at the outer edges of the City. In addition, the Humboldt County 2017 General Plan contains multiple policies, referenced in the Regulatory Setting, to conserve large parcels of farmland and prime agricultural land throughout the County and surrounding areas of Ferndale. As such, there are numerous other parcels and opportunities for agricultural land preservation in the areas surrounding Ferndale. Although adoption and implementation of the Land Use Element may result in the development of lands that may be considered prime agricultural land, the overarching benefit to agricultural resources is greater from infill development than it would be from sprawl. Therefore, by focusing development within City limits the potential impacts of prime agricultural lands conversion, is less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AG-02: Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Finding AG-02: The zoning designations of the parcels with proposed land use changes would be updated for consistency with the land uses. All future proposed development would be in compliance with City zoning. There are no Williamson Act contracts in the City. A less than significant impact would occur.

The Land Use Element proposes changes to eight Agriculture Exclusive (A-E) designated parcels to residential (R-1); the zoning designations of the parcels with proposed land use changes would also be updated to residential for consistency with the land uses. These parcels are clustered on the west side of the City and are shown in Figure 4.3-3. Seven of these eight parcels (4.51 acres total) are already developed with residential/accessory uses and are all less than 1.21 acres in size each. Therefore, the proposed change in designation of these parcels will not conflict with existing zoning for agriculture use, but rather will accurately reflect the exiting uses of the parcels.

The Land Use Element seeks to preserve the agricultural nature of the area while still providing land to accommodate projected growth. The Project promotes infill development with Policies LU-1.4 and LU-2.1. In addition, Policies LU-3.1 and LU-4.3 aim to protect and preserve the agricultural land surrounding the City. All future proposed development would be in compliance with City zoning. Agricultural zoned land exists within the City boundary. Those areas designated agricultural land have limitations on building pursuant to §5.16 of the City Municipal Code. There are no Williamson Act contracts in the City. There are 47.5 acres of land enrolled in the Williamson Act within the Project's Planning Area, north of the city boundary; these Williamson Act contracts will not be affected by the land use designation changes proposed by the Project. Any proposed new development will be within the existing City limits and consistent with zoning standards and requirements. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AG-03: Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Finding AG-03: The Project will not conflict with existing zoning or result in the rezoning of forest land, timberland, or Timberland Production areas. As such, there will be no impact.

Land Use and Safety Element policies and programs do not conflict with the current zoning of timber areas, nor does it change the zoning of any timber production areas as there are no areas within the City designated as timberlands. The Project does not conflict with existing zoning of forest land and will not cause rezoning of forest land. As such, there will be no impacts to timber production zones as defined by Government Code section 51104(g) or to forested lands.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AG-04: Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

Finding AG-04: The Land Use Element and Safety Element policies encourage infill development and generally avoid impacting forested areas. Potential impacts from Project implementation are less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.4 – Francis Creek Corridor • Policy LU-3.5 – Forest Lands Preservation
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control
Safety Element	Goal 2	• Policy 2.8 • Policy 2.9
Safety Element	Goal 4	• Program 4.c

Implementation of the Project would not result in the loss or conversion of forest land as there are several policies and programs (LU-3.1, LU-3.4, LU-3.5, LU-4.1, LU-4.2 and Safety Element Policy 2.8, Policy 2.9, Program 4.c) that promote the conservation and maintenance of forest lands to preserve these natural resources now and into the future. Policies also further prioritize infill development in both existing commercial (LU-2.1) and residential (LU-1.4) land designations to limit new development in forested land.

The land use change designations proposed under the Land Use Element do not overlap with forest land although there are three parcels south of Centerville Road totaling 1.27 acres on the edge of forest lands. These parcels are not currently zoned for timber or timber production and are proposed to be designated residential low density (R-1), which is their current primary land use. These properties already have residential development. The change in land use designation reflects the current use of the land and as such does not promote further development of the property or result in loss or conversion of forest lands. Should further development be proposed for these parcels, City design standards and existing regulations would apply. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AG-05: Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Finding AG-05: The Land Use and Safety Element policies and programs encourage the protection of existing agriculture and forest land, therefore impacts from new development resulting from implementation of the Project are expected to be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.4 – Francis Creek Corridor • Policy LU-3.5 – Forest Lands Preservation
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation
Land Use Element	Implementation Programs	• LU-IP7: Open Space Action Program
Safety Element	Goal 2	• Policy 2.8 • Policy 2.9
Safety Element	Goal 4	• Program 4.c

There is limited potential for the conversion of farmland and forest land to non-agricultural and non-forest uses to areas in proximity of proposed land use changes resulting from implementation of the Project. The Project incorporates multiple new policies, in conjunction with existing policies, to protect and preserve agricultural and forested lands in and around City limits. In addition, any new development would occur within existing City limits with no associated annexations to the City and several of the parcels with proposed land use designation changes are already developed. Land Use Element proposed policies prioritize residential and commercial infill (LU-1.4 and LU-2.1) and City design standards would minimize impact to the property and surrounding agricultural or forest land that are not designated for A-E. Areas still designated agricultural land have limitations on building pursuant to §5.16 of the City Municipal Code.

Proposed policies LU-3.1, LU-3.5, and LU-4.3 as well as LU-IP7 aim to protect and preserve the agricultural land, forest land, open space, and agricultural uses surrounding these changes in land use. These policies and programs help the City maintain the surrounding greenbelt and control urban sprawl. In addition, the Humboldt County 2017 General Plan contains multiple policies (RL-S1, AG-G2, AG-P6) that further conserve large parcels of farmland and their usage in the Planning Area outside of City limits. It also includes multiple policies (RL-S1, FR-G4, FR-P19) that preserve timberland and compatible uses around forest land in the area surrounding Ferndale.

As discussed throughout this section, the City's strategy of promoting infill development is being carried out to protect natural resources and contiguous working lands outside of the City boundary. Therefore, implementation of the Land Use and Safety Elements would overwhelmingly protect agricultural and forest resources and help prevent future conversions. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Assembly Revenue and Taxation Committee. (1979). *California's Taxation of Timber and Timberland.* GGU Law Digital Commons.

Board of Forestry and Fire Protection. (2023). *About*. Retrieved from https://bof.fire.ca.gov/about/

CAL Fire. (2023, September 25). *CAL FIRE Timber Harvesting Plans All TA83.* Retrieved from CAL FIRE: https://hub-calfire-forestry.hub.arcgis.com/maps/04777bf6e6ce4b4d93298f4e3ba88d7f/about

California Department of Conservation. (1997). *California Agricultural Land Evaluation and Site Assessment Model.* Office of Land Conservation.

California Department of Conservation. (n.d.-a). *Williamson Act Program*. Retrieved from https://www.conservation.ca.gov/dlrp/lca

California Department of Conservation. (n.d.-b). *Farmland Mapping & Monitoring Program*. Retrieved from https://www.conservation.ca.gov/dlrp/fmmp

California Department of Conservation. (n.d.-c). *Sustainable Agricultural Lands Conservation Program*. Retrieved from https://www.conservation.ca.gov/dlrp/grant-programs/SALCP

City of Ferndale. (2014). *Zoning Ordinance 02-02.*

Georgia Soil and Water Conservation Commission. (n.d.). *Agricultural Conservation Programs*. Retrieved from Georgia Government: https://gaswcc.georgia.gov/agricultural-conservation-programs/usda-nrcs-programs

Government Code §51102. (1982). CA Timberland Productivity Act of 1982.

Government Code §51104. (2014). Timberland Definitions.

Humboldt County. (2017). *General Plan .*

Humboldt County Code §314-43. (2023). Title III, Land Use and Development.

Humboldt County. (n.d.). *Williamson Act Committee*. Retrieved from https://humboldtgov.org/1302/Williamson-Act-Committee

National Resources Conservation Service. (2013). *Part 523 - Farmland Protection Policy Act Manual.* United States Department of Agriculture .

National Resources Conservation Service. (n.d.-a). *Farmland Protection Policy Act*. Retrieved from U.S. Department of Agriculture: https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/land/cropland/farmland-protection-policy-act

Natural Resources Conservation Service. (n.d.-b). *Land Evaluation and Site Assessment*. Retrieved from U.S. Department of Agriculture: https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/land/evaluation-and-assessment

Natural Resources Conservation Service. (n.d.-c). *Agricultural Conservation Easement Program*. Retrieved from U.S. Department of Agriculture: https://www.nrcs.usda.gov/programs-initiatives/acep-agricultural-conservation-easement-program

Nunamaker, C., Rodrigues, K., Leblanc, J., & Nakamura, G. (2007). *Forest Taxation, Estate Planning, and Conservation Easements.* UC Division of Agriculture and Natural Resources.

Scully, T. (2023, May 21). *Featured Farm: California Organic Dairy Farming: Grazing Green at Cahill Dairy, Ferndale, California Owned and operated by the Cahill Family*. Retrieved from Northeast Organic Dairy Producers Alliance: https://www.nodpa.com/n/8100/Featured-Farm-California-Organic-Dairy-Farming-Grazing-Green-at-Cahill-Dairy-Ferndale-California-Owned-and-operated-by-the-Cahill-Family#:~:text=Ferndale%2C%20bordered%20by%20the%20Pacific,herds%20are%20under%20100%20head.

University of California Press. (1982-2004). Primary State Laws and Regulations. *UC Press E-Books Collection*.

4.4 AIR QUALITY

This section includes a description of current air quality conditions in Ferndale, a summary of applicable federal and state standards, and an analysis of the potential air quality impacts associated with the Ferndale General Plan Land Use and Safety Element Updates.

ENVIRONMENTAL SETTING

The City of Ferndale is located on the alluvial plain of the Eel River Valley roughly 4.5 miles from the Pacific Ocean. Ferndale's climate and wind patterns are similar to other low-lying coastal areas in Humboldt County. Average monthly temperatures range from 42° Fahrenheit (5.55° C) in the winter to 62° Fahrenheit (16.6° C) in the summer. Annual rainfall patterns in Ferndale are influenced by the position of the Jet Stream which forms low pressure zones that in turn form "storm stacks" carrying moisture-laden air from the tropics across the pacific northwest in the winter months. As a result of this influence, the majority of Ferndale's precipitation typically occurs during the months of November through March. Conversely, a dry season with little precipitation occurs during the summer months.

Air quality in Ferndale is predominantly influenced by the climatic regimes of the Pacific Ocean. In summer, warm ground surfaces inland draw in cool air from the ocean, creating frequent thick fog along the coast and making northwesterly winds common. In winter, when precipitation is high, surface wind directions are highly variable with frequent south wind patterns due to oceanic/jet stream storm activity. These wind patterns help to disperse air pollutant emissions in coastal communities. When the atmosphere is stable (e.g., calm winds, clear skies), warm air overlies cooler air causing a separation of air masses into distinct layers. This "inversion layer" affects the dispersion of air pollutants by reducing the depth of atmosphere within which the pollutants can be mixed, trapping pollutants nearer to ground level.

Air Quality monitoring for Humboldt County is conducted by the North Coast Unified Air Quality Management District (NCUAQMD) at the Eureka-Jacobs monitoring station located in Eureka; this station monitors CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Ozone. Humboldt County and Ferndale generally experience good air quality with the exception of PM_{10} emissions which have historically exceeded the California 24-hour ambient air quality standard during the wintertime when residents are using woodstoves for heating and inversion layers are present, as well as during wildfire season when wind patterns bring smoke to coastal areas.

REGULATORY SETTING

FEDERAL

The Federal Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to define parameters for maintaining clean outdoor air, and establish National Ambient Air Quality Standards (NAAQS) to prevent impacts to human health and the environment. The NAAQS establishes emissions thresholds to control and reduce six common pollutants known as "criteria" air pollutants. Criteria pollutants are those that have been scientifically proven to cause damage to human health (e.g., premature death, chronic illnesses), visibility, animals, crops, vegetation, and property. Federal Air Quality Standards are shown in Table 4.4-1.

STATE

The California Air Resources Board (CARB) adopted the California Ambient Air Quality Standards (CAAQS) which are more stringent than the NAAQS and include additional criteria pollutants. California Law continues to mandate compliance with the CAAQS which by federal law must be in alignment with NAAQS emissions thresholds at a minimum.

Table 4.4-1: Federal and State Air Quality Standards

Federal and State Air Quality Standards for Criteria Pollutants			
Pollutant	**Averaging Time**	**Federal Standard**	**CA Standard**
Ozone (O_3)	1 hour	-	.09 ppm
	8 hour	0.070 ppm	.07 ppm
Carbon Monoxide (CO)	1 hour	35 ppm	20 ppm
	8 hour	9 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1 hour	.100 ppm	.18 ppm
	Annual Average	.053 ppm	.03 ppm
Sulfur Dioxide (SO_2)	1 hour	.075 ppm	.25 ppm
	24 hour	.14 ppm	.04 ppm
	Annual Average	.030 ppm	-
Respirable Particulate Matter (PM_{10})	24 hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	Annual Average	-	20 $\mu g/m^3$
Fine Particulate Matter ($PM_{2.5}$)	24 hour	35 $\mu g/m^3$	-
	Annual Average	12 $\mu g/m^3$	12 $\mu g/m^3$
Lead	Monthly average	-	1.5 $\mu g/m^3$
	Quarterly	.15 $\mu g/m^3$	-
Hydrogen Sulfide	1 hour	-	.03 ppm
Visibility Reducing Particles	8 hour	-	"extinction of 0.23 per kilometer"
Sulfates (SO_4^{-2})	24 hour	-	25 $\mu g/m^3$
Vinyl Chloride	24 hour	-	0.01 ppm

Notes: ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter

Sources: CARB 2022, NCUAQMD 2023

Toxic Air Contaminants

Toxic Air Contaminants (TACs) or Hazardous Air Pollutants (HAPs) are air pollutants with short-term and long-term adverse human health effects for which no ambient air quality standards have been established. TACs are regulated at individual point sources through the National Emissions Standard for Hazardous Air Pollutants, and on the state level through the California Health and Safety Code Section 39666. TACs / HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides.

REGIONAL AND LOCAL

The City of Ferndale lies within the North Coast Air Basin which is divided into three Districts - the North Coast Unified Air Quality Management District (NCUAQMD), the Mendocino Air Pollution Control District, and the Northern Sonoma County Air Pollution Control District. Communities located in the North Coast Air Basin are

required to meet the standards outlined in the NCUAQMD Rules & Regulations. The NCUAQMD Rules & Regulations were established to "achieve, maintain, and protect health-based State and Federal Ambient Air Quality Standards and prevent deterioration of levels of air quality which may jeopardize human health and safety; prevent injury to plant and animal life; avoid damage to property; and preserve the comfort, convenience, and enjoyment of the natural attractions of the California North Coast Air Basin."

The key components of the NCUAQMD Rules & Regulations are summarized below:

Regulation I: General Provisions, Permits & Prohibitions

- Rule 104 prohibits Public Nuisance as defined as "such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the health, comfort, repose or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."
- Rule 104 includes:
    - Opacity standards for visible emissions (residential heating units such as woodstoves, pellet stoves, fireplaces, and fireplace inserts are exempt)
    - Emissions standards for Particulate Matter from combustion sources such as power plants and pulp mills.
    - Best management practices for preventing fugitive dust emissions.
- Rule 110: New Source Review and Prevention of Significant Deterioration establishes pre-construction review requirements for new and modified stationary sources of air pollution.
    - Prohibits any net increase in emissions from new or modified stationary sources which emit, or have the potential to emit, 25 tons per year or more of any non-attainment pollutant or its precursors.

Regulation II limits the quantities of particulate matter and toxic pollutants emitted as a result of the open burning of material.

Regulation III includes measures and regulations to control the emissions of Toxic Air Contaminants per California Health & Safety Code section 39666 requirements.

The NCUAQMD is further required to develop an air quality plan to achieve and maintain attainment status with federal and state ambient air quality standards. In 1995, the NCUAQMD established the Draft Particulate Matter (PM_{10}) Attainment Plan to develop control measures designed to reduce ambient levels of PM_{10} to below state ambient air quality standards (50 $\mu g/m^3$). This plan is reviewed annually by the NCUAQMD to verify that the control measures proposed are still relevant to achieving attainment status with the state 24-hour PM_{10} air quality standard.

The Attainment Plan PM_{10} Control strategies include:

1. Transportation Control Measures:
    a. Public Transit - replacing diesel-powered buses with low-carbon fuel buses
    b. Rideshare programs
    c. Park and Ride Lots / carpooling
    d. Vehicle Buy-back programs
    e. Smoking Vehicle programs
    f. Traffic Flow Improvements

   g. Bicycling programs
2. Land Use Measures:
   a. Land uses that enable people to walk or use public transportation for shopping or employment rather than relying on their car.
   b. Encouraging local agencies to develop an air quality element.
3. Open Burning Measures:
   a. Encourage use of enhanced wood stoves
   b. Prohibition of sale of installation of wood burning stoves in new homes unless they are EPA certified or equivalent.

State and Federal requirements for controlling point source emissions of Toxic Air Contaminants (TACs) are implemented through the NCUAQMD air quality permits for stationary sources. The NCUAQMD does not currently have any thresholds for TACs, but recommends the use of the California Air Pollution Control Officers Association "Health Risk Assessments for Proposed Land Use Projects" to evaluate and reduce potential TAC impacts from new development.

Additionally, the NCUAQMD administers the AB 2588 Air Toxics "Hot Spots" Information and Assessment Act Program for the north coast region. The Hot Spots Act requires stationary sources of air pollutant emissions to submit a health risk assessment. A health risk assessment includes a "comprehensive analysis of the dispersion of hazardous substances into the environment, the potential for human exposure, and a quantitative assessment of both individual and population-wide health risks associated with those levels of exposure".

City of Ferndale Compliance

Ferndale's current level of compliance is similar to the rest of Humboldt County which generally has good air quality. Currently, the County is in attainment for all federal and state air quality standards with the exception of the 24-hour state Particulate Matter (PM_{10}) standard (50 $\mu g/m^3$). The County has exceeded the 24-hour state PM_{10} standard 12 times between 2014 and 2019. Nine of the 12 exceedances were due to documented wildfires, and the remaining three exceedances were attributed to woodstove burning.

Particulate matter is made of a mixture of solid particles and water droplets emitted into the air. Respirable Particulate Matter (PM_{10}) particles are those that are larger than 2.5 microns, but smaller than 10 microns. Fine Particulate Matter ($PM_{2.5}$) is defined as particles that are 2.5 microns or less in diameter; $PM_{2.5}$ comprises a portion of PM_{10}. PM_{10} and $PM_{2.5}$ are generally derived from different sources. Fossil fuel and wood combustion produce the majority of the $PM_{2.5}$ and a significant portion of PM_{10}. PM_{10} sources also include dust from construction, landfills, and agriculture, dust caused by travel on paved & unpaved roads, wildfire smoke and brush burning, sea salt, industrial emissions, and wind-blown dust and pollen. According to the Environmental Protection Agency, particulate matter passes through the nose to the throat to penetrate deep into the lungs causing serious health issues such as asthma, decreased lung function, irregular heartbeat, and nonfatal heart attacks. Inhalation of PM_{10} is also known to cause serious health problems due to carcinogens and other toxic compounds adhering to the surface of the particulate matter and entering the body through the lungs.

Air quality data collected by the North Coast Unified Air Quality Management District reveals a seasonal pattern in which PM_{10} emissions typically increase in the winter months and are at their lowest levels during the summer months. The Attainment Plan contains an estimate of PM_{10} emissions by source for Humboldt County. In 1992, the NCUAQMD conducted a 1-year chemical mass balance study to determine the primary sources of PM_{10} emissions. Results of the study showed that woodstove emissions during the winter months (combined with

seasonal temperature inversion patterns) are the primary cause of PM_{10} exceedances. Emissions from transportation and, more recently, wildfire smoke are also key sources of PM_{10} emissions within Humboldt County.

Sources of PM_{10} emissions in Humboldt County are:

- Woodstove emissions
- Dust from travel on paved and unpaved roads
- Wildfire smoke
- On-road & off-road vehicle exhaust including farm and construction equipment
- Open burning of vegetation
- Stationary industrial sources
- e.g., Humboldt Sawmill Co. and Humboldt Bay Generating Station
- Natural sources: sea salt, windblown dust, and biogenic emissions (e.g., plants and trees)

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

This analysis uses the significance criteria from the CEQA Guidelines Appendix G. The proposed Land Use and Safety Elements of the City of Ferndale General Plan would result in a significant impact on air quality if they would:

a) Conflict with or obstruct implementation of the applicable air quality plan;
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
d) Expose sensitive receptors to substantial pollutant concentrations; or
e) Create objectionable odors affecting a substantial number of people.

In determining whether a planning decision such as adoption of the Land Use and Safety Elements will have significant air quality impacts, planners would typically apply the regional Air Quality District's thresholds of significance. The NCUAQMD has not formally adopted significance thresholds, but instead utilizes the Best Available Control Technology approach to minimize air quality impacts from new development. Potential Air Quality impacts resulting from adopting the Land Use and Safety Elements were evaluated based on projected population growth, anticipated development potential under proposed housing density allowances, and emissions factors related to grid electricity use, woodstove use, vehicle miles traveled (VMT) and construction activities.

Implementation of the proposed Land Use Element would allow for development over a 20-year time horizon. During the planning period, new homes and businesses will be constructed; new woodstoves will be installed to heat homes, and new residents will increase local energy demand and drive additional vehicles on unpaved and paved roads. All of these new activities have the potential to add criteria pollutant emissions into the local air basin. This analysis evaluates Air Quality impacts related to changes in annual vehicle miles traveled, energy use in homes, and emissions from construction. A description of the key air pollution emissions sources is included in the section that follows. The resulting changes in criteria pollutant emissions are shown in the tables below.

Table 4.4-2: Total Criteria Pollutant Emissions from Primary Sources 2022

Source	NOx (Lb./year)	SOx (Lb./year)	CO (Lb./year)	PM (Lb./year)
Transportation Fuels	74,535	3,873	2,879,099	4,750
Electricity (all sources)	2,586	542	no data	715
Propane Fuel	650	5	375	35
Woodstoves	814	116	67,105	8,897
Total	**78,585**	**4,536**	**2,946,579**	**14,397**

Table 4.4-3: Criteria Pollutants from Primary Sources 2045 LOW growth scenario

Source	NOx (Lb./year)	SOx (Lb./year)	CO (Lb./year)	PM (Lb./year)
Transportation Fuels	74,986	3,896	2,896,537	4,779
Electricity (all sources)	2,706	567	no data	748
Propane Fuel	683	6	394	37
Woodstoves	824	118	67,105	8,936
Total	**79,199**	**4,587**	**2,964,036**	**14,499**

Table 4.4-4: Percent Change in Criteria Pollutant Emissions 2022-2045 LOW growth scenario

Total Emissions	2022	2045 LOW growth	% change
NOx (Lb./year)	78,585	79,199	0.78%
SOx (Lb./year)	4,536	4,587	1.12%
CO (Lb./year)	2,946,579	2,964,036	0.59%
PM (Lb./year)	14,397	14,399	0.71%

Table 4.4-5: Criteria Pollutant Emissions from Primary Sources 2045 HIGH growth scenario

Source	NOx (Lb./year)	SOx (Lb./year)	CO (Lb./year)	PM (Lb./year)
Transportation Fuels	82,410	4,282	3,183,306	5,252
Electricity (all sources)	2,781	582	no data	769
Propane Fuel	1,203	10	694	65
Woodstoves	977	149	67,105	9,553
Total	**87,371**	**5,023**	**3,251,105**	**15,638**

Table 4.4-6: Percent Change in Criteria Pollutant Emissions 2022-2045 HIGH growth scenario

Total Emissions	2022	2045 HIGH growth	% change
NOx (Lb./year)	78,585	87,371	11.2%

SOx (Lb./year)	4,536	5,023	10.7%
CO (Lb./year)	2,946,579	3,251,105	10.3%
PM (Lb./year)	14,397	15,663	8.6%

Transportation produces the largest quantity of oxides of nitrogen (NOx), oxides of sulfur (SOx), and carbon monoxide (CO); these are all produced in the combustion process. The largest source of particulate matter (PM) is woodstoves followed by transportation. Woodstoves also produce the second largest quantity of CO as a direct result of the combustion process. Although the Humboldt County electrical grid has a high percentage of clean energy sources, the use of biomass in the Humboldt Sawmill Company biomass power plant and the use of natural gas in the Humboldt Bay Generating Station also produce significant amounts of NOx, SOx, and PM each year. The primary criteria pollutant emissions sources evaluated in this analysis are described below.

Transportation

The primary source of criteria air pollutant emissions from transportation is from burning fossil fuels in combustion engines. Non-primary sources of particulate matter ($PM_{2.5}$ and PM_{10}) are also produced from brake and tire wear as well as suspension of road dust due to vehicular travel. This analysis focuses on air pollutant emissions from transportation fuels as the emissions from these sources are easy to measure and have been extensively studied and documented. The non-exhaust sources are not included in this analysis as they are difficult to measure, difficult to control, and assessing the level of emissions produced from this source involves a large range of factors (e.g., size of vehicle, type of brakes, road conditions, vehicle speed, temperature etc.). It can be assumed that there will be some amount of an increase in non-exhaust emissions as additional vehicles are driven on local roads by new Ferndale residents.

The current dominant form of transportation is based on fossil fuels. Criteria pollutants are emitted when fossil fuels are combusted in an engine. Annual Vehicle Miles Traveled (VMT) is a measurement used to calculate the amount of fossil fuels burned and estimate the quantity of criteria pollutants emitted each year through transportation activities. Ferndale's per capita annual VMT was estimated using the CA Office of Traffic Safety population and daily vehicle miles traveled (DVMT) data for Humboldt County (2017 - 2021). After accounting for the population under 15 years of age who cannot legally drive, and the population over 85 who choose not to retain a driver's license, an average of 11,657 miles per capita are estimated to be driven in Humboldt County each year. Based on this value, the maximum projected number of new Ferndale residents who drive in 2045 could contribute to an additional 1,688,638 vehicle miles traveled per year.

Development allowed under the Ferndale Land Use Element Update is projected to lead to an increase in the number of annual vehicle miles traveled (VMT) by Ferndale residents, which in turn will result in increased PM_{10} and other criteria pollutant emissions. The future increase in VMT will be proportionate to the realized population growth, as well as the use of other forms of transportation such as walking, riding a bike, and using public transportation. The impacts associated with vehicle exhaust are projected to decrease over time as state and local initiatives increase the adoption and use of electric vehicles that do not produce combustion emissions. Estimated emissions from increased annual VMT in 2045 is shown in Table 4.4-3 and Table 4.4-5 above.

Residential Energy Use

Population growth supported by additional housing availability will result in increased residential energy demand. New Ferndale residents will create additional demand for electricity, propane, and wood energy resources. The potential increase in residential energy use was evaluated based on the maximum anticipated build-out of new housing units (85) within the proposed land use types (e.g., single family, multifamily etc.). This level of housing

build-out would accommodate 184 new residents assuming an average of 2.17 persons per household. However, given that the future population growth in Ferndale is projected to be between 5 persons (at the low growth rate scenario of 0.03 percent per year) to 157 new residents (Ferndale's share of projected population growth in Humboldt County at 0.5 percent per year), it is not likely that the City of Ferndale will reach maximum potential build-out as allowed under the proposed Land Use Element.

Air quality impacts associated with new residential electricity demand will depend on the energy resources used to produce electricity. Currently, the majority of Humboldt County's power comes from renewable resources that do not produce emissions such as hydroelectric, solar, wind, and geothermal. The remaining power supply comes from the Humboldt Sawmill Company power plant in Scotia, CA and the Humboldt Bay Generating Station in Eureka, CA. The Scotia power plant produces electricity by burning woody biomass that is a waste product from the local forest products industry. The Eureka power plant burns natural gas in engine generators to produce electric power. Both of these power plants rely on combustion processes that produce criteria air pollutant emissions in the local air basin.

During the 20-year planning horizon air quality impacts from electricity demand are expected to decrease as the local and regional electric power grid becomes increasingly supplied by renewable energy sources to meet state's greenhouse gas reduction targets. Meeting the state's targets will reduce the demand for fossil fuel energy resources such as natural gas thus reducing the air pollution from this source of electric power. While biomass is considered a renewable energy resource by the state of California, and therefore not a target for replacement, concerns over the local air pollutant emissions from this power plant may eventually result in the replacement of this energy resource with cleaner renewable energy resources such as solar and wind.

Additionally, under the 2020 Title 24 Solar Mandate, newly constructed low-rise residential buildings that are occupancy group R-2, multifamily, with three habitable stories or less; or R-1, single family located on a residential site are required to include a solar photovoltaic generation system. These onsite solar energy systems will decrease the amount of demand for grid electricity and therefore the air pollution associated with new housing energy use will be reduced. Energy demand for space heating/cooling and water heating (e.g., electricity, propane, and wood) of new housing units is also anticipated to be minimal as construction of new houses in Ferndale will be required to meet CA Title 24 2020 Building Energy Efficiency Standards.

Impacts from the installation and use of new residential woodstoves will result in a source of new PM_{10} emissions, and could contribute to the County's PM_{10} exceedances. However, the magnitude of the impact from use of new woodstoves will be minimal (7 percent) due to the efficiency of modern EPA-Certified woodstoves on the market as compared to the older models still in use in existing homes. Newly manufactured woodstoves are required to emit no more than 2.0 g of PM / hour of operation as compared to older woodstoves which can emit 15 - 30 g PM / hour of operation. This impact can be mitigated through replacement of existing older woodstoves with modern EPA-Certified woodstoves as described in the Impacts section that follows. Table 4.4-3 and Table 4.4-5 above show the potential air quality impacts from increased residential electricity, propane, and wood energy use.

Construction Emissions

Air Quality emissions associated with construction are considered to be short-term impacts. Sources of air pollution from construction include: demolition activities, land clearing, exposed soils during cut-and-fill operations, heavy equipment use, worker vehicle exhaust, and emissions associated with transporting construction workers and supplies on paved and unpaved roads. Construction emissions vary based on the scale of the project and weather conditions during construction. The EPA has developed an emissions factor of 1.2 tons

PM_{10} / acre / month of construction for non-project specific emissions estimates. This factor includes a moderate construction activity level, moderate silt content in the soil, and semi-arid climate.

The construction air quality impact analysis assumes 24.5 total acres of land is developed during the planning period (e.g., maximum buildout) requiring an assumed total of 36 months construction time. Using these assumptions, particulate matter (PM) emissions from new construction activities could be as high as an average of 96,198 lbs. PM / year over the planning horizon. This value is a very rough estimate used to show the relative potential impact from unspecific construction activity. The U.S. EPA notes that the emissions factor they provide for non-project specific estimates is conservative and will likely be an over-estimate. Actual construction emissions impacts will need to be evaluated based on the scale of each specific project and the construction operations and equipment required. Construction air pollution emissions can be mitigated with Best Management Control Technologies as outlined by the NCUAQMD Rules & Regulations; Rule 104.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

Impacts associated with the City of Ferndale Land Use and Safety Elements were analyzed in accordance with the CEQA Guidelines Appendix G thresholds of significance. Impacts related to air quality from the implementation of the Project would be significant if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard;
c) Expose sensitive receptors to substantial pollutant concentrations;
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

PROJECT IMPACTS AND MITIGATION

Impact AQ-01: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Finding AQ-01: The Land Use and the Safety Elements contain policies that support the implementation of the NCUAQMD PM_{10} Attainment Plan; therefore, impacts would be less than significant.

The implementation of the Land Use Element Update would result in a significant impact if the policies contained in the Update are inconsistent with the Particulate Matter (PM_{10}) Attainment plan adopted by the NCUAQMD (May 11, 1995).

The Land Use Element involves the reclassification of several land use zoning designations that will allow for increased density in new housing development, as well as residential and commercial infill in existing buildings. New development under the Land Use Element is designed to provide a greater diversity in housing to meet the needs of older community members, the local workforce, and anticipated population growth in the region. New development allowed under the proposed Land Use Element could result in new sources of PM_{10} emissions associated with transportation, new residential energy use, and construction activities.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.1 – Diverse Uses • Policy LU-1.4 – Residential Infill • Policy LU-1.7 – Planned Development • Policy LU-1.8 – Multi Modal Transportation • Policy LU-1.9 – Right-of-ways
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.4 – Light Industrial Uses • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities • Policy LU-2.6 – Existing Commercial Areas Revitalization • Policy LU-2.7 – Increase Residential Uses
Safety Element	Goal 3	• Policy 3.2 – Ensure Adequate Water Supplies for Fire Suppression • Policy 3.6 – Disseminate Fire Prevention Education • Policy 3.8 – Promote Smoke Detector and Fire Extinguisher Installation • Program 3.a Request Annual Fire Hydrant Flow Tests • Program 3.f – Refer Development Proposals to Ferndale Volunteer Fire Department for comment
Safety Element	Goal 4	• Policy 4.3 – Support the Electrification of Homes and Businesses • Policy 4.4 – Invest in Pedestrian and Bike Trails • Program 4.a – Install 10 new Electric Vehicle Charging Stations by 2030 • Program 4.b – Assess Feasibility of Twice Daily Bus Service to Ferndale • Program 4.d – Designate / Develop New Trail Systems • Program 4.e – Multifamily Development Standards Requiring Full Electrification of Buildings • Program 4.f – Incentivize Conversion of Propane Appliances to Electric • Program 4.g – Transition all City-Owned Vehicles to Electric by 2040

The Land Use Element is aligned with the NCUAQMD Attainment Plan PM_{10} control measures in that the proposed policies focus on infill in existing buildings and underutilized parcels within City boundaries. This approach aims to minimize PM_{10} emissions by reducing construction emissions through rehabilitation of existing, unused building spaces, as well as reducing local transportation emissions by constructing new housing units within the City limits where residents will be within walking / bicycling distance of downtown services. Additionally, the Land Use Element policies promote multi-modal transportation including increasing bike and pedestrian routes throughout the City and an expansion of the trail network. These policies are designed to reduce the generation of criteria pollutants including PM_{10}.

The Safety Element is aligned with the NCUAQMD PM_{10} Attainment plan in that it contains policies to convert City-owned vehicles to electric by 2040 as well as install 10 new electric vehicle charging stations by 2030. The Safety Element further calls for an investment in new pedestrian and bike trails as well as electrification of buildings. These policies support the PM_{10} Attainment Plan goal of reducing emissions associated with transportation and land use.

The Safety Element also contains policies to prevent and respond to wildland and urban fires which can produce significant quantities of air pollution including PM_{10}. Although wildland fires are not included in the current Attainment Plan, policies that promote fire prevention education, fire response preparedness in the form of staffing and ensuring adequate water supplies as well as policies that promote identification of fire hazards in new development all support efforts to reduce air pollution from wildland and urban fires and therefore support the over-arching goal of the Attainment Plan.

The Ferndale Land Use and Safety Element Updates contain policies and implementation measures that support the implementation of the NCUAQMD Particulate Matter (PM_{10}) Attainment Plan. Adoption and implementation of the proposed Ferndale Land Use and Safety Elements would not conflict with or obstruct the application of the NCUAQMD PM_{10} Attainment Plan, therefore impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AQ-02: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard?

Finding AQ-02: Potential development allowed under the proposed Land Use Element will result in an increase in PM_{10} emissions. The Land Use and Safety Elements both contain policies designed to reduce emissions associated with land use and transportation. As Humboldt County is currently in non-attainment status for the California 24-hour PM_{10} emissions standard, any increase in PM_{10} emissions could be considered a "cumulatively considerable net increase" in PM_{10} emissions. Therefore, impacts related to the Project are considered to be significant but unavoidable.

New development that may occur as a result of implementing the Land Use Update would result in emissions from construction activities, transportation, and new residential and commercial energy use. Construction activities will likely occur intermittently over the General Plan time horizon. Sources of construction-related emissions include: use of heavy-duty off-road vehicles, employee vehicle exhaust, dust from earth moving activities such as grading and excavation, dust from travel on paved and unpaved roads, and asphalt paving. Air pollution emissions from construction activities vary depending on the scale of the project and heavy equipment used as well as the level of adherence to best management practices related to dust control during construction activities.

In the absence of mitigation and best management practices, construction activities could result in significant PM_{10} emissions on a temporary basis. PM_{10} emissions in the form of fugitive dust from construction activities could also become wind-blown and result in a nuisance impact to nearby residences and businesses. Temporary

increases in PM_{10} emissions from construction activities could contribute to the County's exceedances of the 24-hour state PM_{10} standard.

Implementation of the Land Use Element could result in new, diverse housing development and new commercial infill. The availability of new single-family and multi-family housing would allow for the anticipated population growth as well as shifts in housing needs (e.g., upsizing for new families and downsizing for older community members). New Ferndale residents would use vehicles to drive on paved and unpaved roads leading to increases in the number of vehicle miles traveled (VMT) each day by City residents. This increase in VMT would result in new sources of criteria pollutants including PM_{10} emissions.

Emissions from new residential and commercial electrical energy use is anticipated to be minimal as grid-supplied electricity becomes cleaner with new renewable energy generation coming online. Further, Ferndale residents, businesses, and City operations have the option to purchase 100 percent clean electricity from the local grid eliminating the potential emissions impact from daily electricity use. A portion of the new housing units may include propane appliances which will contribute small amounts of PM emissions. A portion of the new housing may also include new woodstoves that will emit additional PM_{10} into the local air basin during the wintertime. Woodsmoke was identified as the leading cause of PM_{10} emissions exceedances in the NCUAQMD Attainment Plan.

Assuming the maximum population growth and maximum new housing build-out anticipated during the planning horizon, the impacts of the proposed changes contained in the Land Use Element could result in an estimated increase in 1,688,638 Vehicle Miles Traveled per year. Estimated increases in emissions due to construction, energy use, transportation and new woodfired stove use are shown in Table 4.4-3 and Table 4.4-5 above.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill • Policy LU-1.7 – Planned Development • Policy LU-1.8 – Multi Modal Transportation • Policy LU-1.9 – Right-of-ways
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities • Policy LU-2.6 – Existing Commercial Areas Revitalization • Policy LU-2.7 – Increase Residential Uses
Land Use Element	Goal LU-3	• Policy LU-3.5 – Forest Lands Preservation
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Goal 3	• Policy 3.2 – Ensure Adequate Water Supplies for Fire Suppression • Policy 3.6 – Disseminate Fire Prevention Education • Policy 3.8 – Promote Smoke Detector and Fire Extinguisher Installation • Program 3.a Request Annual Fire Hydrant Flow Tests • Program 3.f – Refer Development Proposals to Ferndale Volunteer Fire Department for comment
Safety Element	Goal 4	• Policy 4.3 – Support the Electrification of Homes and Businesses • Policy 4.4 – Invest in Pedestrian and Bike Trails • Program 4.a – Install 10 new Electric Vehicle Charging Stations by 2030 • Program 4.b – Assess Feasibility of Twice Daily Bus Service to Ferndale • Program 4.d – Designate / Develop New Trail Systems • Program 4.e – Multifamily Development Standards Requiring Full Electrification of Buildings • Program 4.f – Incentivize Conversion of Propane Appliances to Electric • Program 4.g – Transition all City-Owned Vehicles to Electric by 2040

Policies within the Land Use Element support residential and commercial infill development which will reduce the amount and duration of heavy equipment required to create new housing and commercial spaces. The Land Use Element also contains policies to support multi-modal and low-carbon transportation, as well as policies to preserve forestland and other vegetated areas. These policies will help Ferndale to improve overall local air quality as trees and other vegetation biologically purify the air by helping to remove particulate matter and other gaseous pollution.

Air Quality impacts related to the adoption of the Land Use Element are projected to be quite small due to the low projected population growth and policy focus on infill development within close proximity to the City center. This development approach enables use of active forms of transportation such as walking, biking, or riding an electric bike rather than relying on a car for commuting, shopping, and entertainment. Further, as personal vehicles and public transit buses in Humboldt County shift to run on cleaner fuels such as electricity and hydrogen, criteria pollutant emissions will be permanently reduced. Finally, all new development will be built to California Energy Code Title 24 standards requiring energy-efficient design/construction and installation of solar energy systems to offset new residential energy use. These requirements will reduce new building energy use and thus, minimize air pollution emissions from grid electricity consumption.

New development as allowed under the proposed Land Use Element would be required to comply with the NCUAQMD Rules & Regulations regarding fugitive dust emissions from construction (Rule 104). As construction emissions will be intermittent in nature, and will be minimized through infill redevelopment activities and NCUAQMD regulations, air quality impacts from this source would be less than significant. Adoption of the policies

contained in the City of Ferndale General Plan Draft Air Quality Element would further reduce the magnitude of this impact.

The proposed Safety Element contains policies to reduce the potential for urban wildfires and increase local response capabilities. These policies could reduce the magnitude and duration of fires, and therefore help to minimize air quality impacts when these events occur. The Safety Element also contains policies to increase electrification of homes thus reducing reliance on propane and wood for primary heating needs, reducing emissions from residential energy use. Finally, the Safety Element contains programs designed to assess the feasibility of new twice-daily bus service, as well as installation of electric vehicle charging stations and the transition of City-owned vehicles to electric. Implementing these policies would reduce PM_{10} and other criteria pollutant emissions associated with transportation.

The adoption and implementation of the Land Use Element would result in an increase in criteria pollutant emissions including PM_{10} emissions, a criteria pollutant for which Humboldt County is currently in non-attainment status. Although the potential emissions resulting from new development and population growth in Ferndale is projected to be quite small as compared to the total annual emissions in Humboldt County, any new sources of PM_{10} emissions can be viewed as "cumulatively considerable" as the NCUAQMD and the County continue to work towards achieving attainment status through PM_{10} emissions reductions. Therefore, this analysis conservatively concludes that the potential increase in PM_{10} emissions related to the adoption and implementation of the Land Use Element would be significant but unavoidable.

Adoption of the Safety Element would not result in any increases of criteria pollutants including PM_{10} emissions. Further, the Safety Element contains policies that if implemented could help to reduce criteria pollutant emissions through urban fire prevention, support for clean fuel vehicle adoption, and electrification of buildings to reduce of wood and propane for primary heating. Therefore, adoption of the Safety Element would have no impact.

MITIGATION MEASURES

Mitigation Measure AQ-01: Adopt the Ferndale General Plan Draft Air Quality Element and implement the policies contained therein.

The Draft Air Quality Element policies with the greatest potential to mitigate PM_{10} emissions impacts include:

Land Use

- Promote incentives to minimize PM_{10} emissions from fireplaces and woodstoves such as the NCUAQMD's Woodsmoke Reduction Pilot Program.
    - Under this program, Ferndale residents can receive a $2,000 - $5,000 voucher for replacement of old woodstoves with a low-emissions, high-efficiency woodstove.
    - Modern EPA-Certified woodstoves require 1/3 less wood for the same amount of heat, and emit 75 - 95 percent less particulate matter as compared to older models.
    - Replacing older woodstoves in the existing housing stock would permanently reduce Ferndale's contribution to wintertime PM_{10} emissions exceedances.
- Preserve established trees where possible.
- Reduce energy use in City-owned assets.

Transportation

- Provide incentives for public, commercial and residential design that supports the charging of electric vehicles, or refueling of alternative fuel vehicles.

- Modify the City procurement policy to specify high fuel efficiency for each vehicle class for City Government vehicles.

Construction

- Require adherence to NCUAQMD Best Management Practices to reduce emissions of dust and other sources of PM_{10} from construction activities.

SIGNIFICANCE AFTER MITIGATION

Any increase in PM_{10} emissions is considered significant as the County is in non-attainment with the State 24-hour standard. Implementation of policies such as incentivizing the upgrade of existing inefficient woodstoves and fireplaces to EPA-certified high-efficiency woodstoves, transition of City fleets to electric vehicles, supporting the development of local electric vehicle charging stations, and employing best management practices to reduce fugitive dust emissions from construction would result in the most significant PM_{10} emissions reductions. However, it is unlikely that the scale of these reductions would reduce new PM_{10} emissions to a level that does not contribute to the County's exceedance of the California 24-hour PM_{10} standard. Therefore, impacts from adopting the Land Use Element would remain significant and unavoidable.

Impact AQ-03: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Finding AQ-03: The Updates to the Land Use and Safety Elements will not result in development activities that will produce substantial pollutant concentrations; therefore, adoption of the Land Use and Safety Elements would have a less than significant impact on sensitive receptors.

Sensitive receptors are people that are more sensitive to the health impacts caused by air pollution such as children, the elderly, and those with existing health problems. Places considered to be sensitive receptors include hospitals, schools and senior living facilities. Residential land use zones are also considered "sensitive areas" that should not be sited near sources of air pollution such as high-traffic roads, refineries, ports, dry-cleaners etc. The NCUAQMD regulates new sources of pollutants that could cause harm to sensitive receptors through adoption of Regulation III: Control of Toxic Air Contaminants which limit exposure to pollutant concentrations for all residents including sensitive receptors.

The Land Use Element contains changes to allowable density in existing residential areas and commercial and residential infill in the downtown Mainstreet Ferndale area. Because the use type in these areas will remain largely unchanged (e.g., residential), the level of risk of exposure to concentrations of pollutants will remain unchanged. Pollution from new housing will primarily be generated by vehicle emissions from resident transportation activities and smoke from woodstove use. The light industrial development allowed under the Land Use Element does not include any industries that would produce substantial pollutant concentrations. The Safety Element Update contains a program that prohibits sensitive receptors from being located near facilities that produce hazardous materials.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs

Land Use Element	Goal LU-1	• Policy LU-1.8 – Multi Modal Transportation
Land Use Element	Goal LU-2	• Policy LU-2.4 – Light Industrial Uses
Land Use Element	Goal 5	• Policy 5.d – Do Not Allow Sensitive Facilities to be Located Near Facilities that Produce Hazardous Materials • Policy 5.e – Require a Buffer Zone Around New Facilities that Produce Hazardous Materials

Increases in residential energy use are not expected to impact sensitive receptors as electricity is not generated in Ferndale, and the energy grid itself is becoming cleaner per California statute. Pollution from woodstoves can be mitigated through policies to promote adoption and use of EPA-certified woodstoves. New sources of localized pollution from vehicle use will be offset by policies and new trail development that encourages active transportation and micro-mobility such as electric bicycles, traditional bicycles, and walking. Transportation emissions will be further attenuated as new public transportation routes are established and as the state of California and Humboldt County move towards cleaner transportation fuels such as electricity and hydrogen. Therefore, the new development allowed under the changes to the Land Use and Safety Elements will have a less than significant impact in regard to exposing sensitive receptors to substantial pollutant concentrations.

MITIGATION MEASURE

No mitigation measures would be required.

Impact AQ-04: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Finding AQ-04: Adoption of the Land Use and Safety Elements would have a less than significant impact related to other emissions, such as objectionable odors, affecting a substantial number of people.

Development facilitated by the adoption of the Land Use and Safety Elements includes adding diversity to the allowable housing density in underutilized existing residential areas within the City limits, as well as commercial infill in the historic buildings in the downtown areas, and light industrial uses such as research & development, and light manufacturing. None of these activities generate objectionable odors. Some odors will be generated by diesel powered equipment and possibly new asphalt associated with construction. As construction activities occur slowly over time, any odors generated will be temporary in nature and will not affect a substantial number of people. Further, the NCUAQMD is responsible for enforcing the provisions of California Health and Safety Code Section 41700 which prohibits the discharge of nuisance odors defined as anything that could endanger the comfort or health of the public. NCUAQMD nuisance odor enforcement actions are based on citizen complaints to local governments and the NCAQMD.

Adoption of the Land Use Update is not expected to generate any significant sources of other emissions or objectionable odors during construction or due to an increase in the residential population, commercial infill, or the allowable light industrial uses. Therefore, the Land Use Update will have a less than significant impact related to objectionable odors affecting a substantial number of people.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

California Air Pollution Control Officers Association. (2022). California Emissions Estimator Model (CalEEMod) User Guide Appendix G Default Data Tables https://www.caleemod.com/user-guide. Accessed 11.16.23.

California Air Resources Board. California Ambient Air Quality Standards. https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed 9/20/23.

California Air Resources Board (CARB). (2015). "Assessment of the Emissions and Energy Impacts of Biomass and Biogas Use in California". https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/11-307.pdf. Accessed 10/07/23.

California Air Resources Board. (2018). CA-GREET 3.0 Supplemental Document and Tables of Changes. Table 1 and Table 22.

California Air Resources Board. (2024). Facility Search Engine; https://ww2.arb.ca.gov/applications/facility-search-engine. Accessed 1/16/24.

California Air Resources Board. iADAM Air Quality Data Statistics. Eureka-Jacobs; Top 4 Summary: Highest 4 Daily 24-hour PM10 Averages. https://www.arb.ca.gov/adam/topfour/topfourdisplay.php. Accessed 10/07/23.

California Air Resources Board. Brake and Tire Wear Emissions. https://ww2.arb.ca.gov/resources/documents/brake-tire-wear-emissions. Accessed 10/07/23.

California Air Resources Board. Inhalable Particulate Matter and Health. https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health. Accessed 9/20/23.

California Department of Motor Vehicles. Vehicles registered by County by type. https://www.dmv.ca.gov/portal/dmv-research-reports/research-development-data-dashboards/vehicles-registered-by-county/. Accessed 1/16/24.

California Energy Commission. 2020 Solar Mandate for New Home Construction. https://www.energy.ca.gov/sites/default/files/2020-11/2020%20-%20CEC%20-%20Solar%20PV%20Systems_ADA.pdf. Accessed 9/20/23.

California Office of Traffic Safety Daily Vehicle Miles Traveled 2020. https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv_view_count=1327&wpv-wpcf-year=2020&wpv-wpcf-city_county=Humboldt+County&wpv_filter_submit=Submit. Accessed 1/16/24.

Humboldt County General Plan Update. (2002). "Background Report on Natural Resources & Hazards; Ch. 9 Air Quality". https://humboldtgov.org/DocumentCenter/View/1374/Chapter-9-Air-Quality-PDF. Accessed 9/20/23.

National Oceanic and Atmospheric Administration. Weather Impacts of ENSO. https://www.noaa.gov/jetstream/enso_impacts#:~:text=The%20position%20of%20this%20dip,position%20of%20the%20Pacific%20Northwest. Accessed 9/20/23.

North Coast Unified Air Quality Management District. (1995). "Particulate Matter (PM_{10}) Attainment Plan Draft Report." Accessed 9/20/23. https://ncuaqmd.specialdistrict.org/files/6f1ad639b/NCUAQMD+Attainment+Plan+5-95.pdf.

North Coast Unified Air Quality Management District. Planning and CEQA. https://ncuaqmd.specialdistrict.org/planning-ceqa. Accessed 10/7/23.

North Coast Unified Air Quality Management District. "Regulation III Control of Toxic Air Contaminants." https://www.ncuaqmd.org/rules-regulations. Accessed 10/7/23.

North Coast Unified Air Quality Management District. "Rule 110 New Source Review and Prevention of Significant Deterioration." https://ncuaqmd.specialdistrict.org/files/397b4b794/Rule+110.pdf ceqa. Accessed 10/7/23.

North Coast Unified Air Quality Management District. "Woodsmoke Reduction Pilot Program." https://www.ncuaqmd.org/woodsmoke-reduction-pilot-program. Accessed 10/7/23.

Pacific Gas & Electric Company (PG&E) Energy Data Request - Public Data Sets (2023). https://pge-energydatarequest.com/public_datasets/download?type=gaz&file=PGE_2023_Q4_GasUsageByZip.zip. Accessed 2/12/24.

Planwest Partners, Inc. (2016). "City of Ferndale General Plan Noise and Air Quality Elements."

Redwood Coast Energy Authority. (2013). "City of Ferndale Energy Assurance Plan"

Redwood Coast Energy Authority. City of Ferndale Energy Use Data Request. Personal communication with Joseph Sloan January 2024.

Redwood Coast Energy Authority; Power Resources webpage. https://redwoodenergy.org/power-resources/. Accessed 2/12/24.

South Coast Air Quality Management District (SCAQMD). (2022). Default Combustion Emission Factors; https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/default-combustion-emission-factors.pdf?sfvrsn=12. Accessed 10/7/23.

U.S. Census American Community Survey data for Ferndale City, CA. https://data.census.gov/table/ACSST5Y2022.S0804?g=160XX00US0623910. Accessed 1/16/24.

U.S. Department f Energy, Average Fuel Economy by Major Vehicle Category. https://afdc.energy.gov/data. Accessed 1/16/24.

U.S. Environmental Protection Agency. AP-42: Compilation of Air Emissions Factors; Fifth Edition, Volume I Chapter 1: External Combustion Sources. https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-fifth-edition-volume-i-chapter-1-external-0. Accessed 1/16/24.

U.S. Environmental Protection Agency. AP-42: Compilation of Air Emissions Factors; Fifth Edition, Volume I Chapter 13: Miscellaneous Sources. https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-fifth-edition-volume-i-chapter-13-miscellaneous-0. Accessed 1/16/24.

U.S. Environmental Protection Agency. AP-42: Compilation of Air Emissions Factors; Fifth Edition, Volume I: Chapter 13.2.3 Heavy Construction Operations. https://www3.epa.gov/ttnchie1/ap42/ch13/final/c13s02-3.pdf. Accessed 1/16/24.

U.S. Environmental Protection Agency. Burn Wise; Choosing the Right Woodburning Stove. Accessed November 2, 2023. https://www.epa.gov/burnwise/choosing-right-wood-burning-stove#:~:text=While%20older%20uncertified%20stoves%20release,of%20EPA%2Dcertified%20wood%20stoves. Accessed 1/16/24.

U.S. Environmental Protection Agency Emissions & Generation Resource Integrated Database (eGRID) Data. https://www.epa.gov/egrid/download-data. Accessed 2/17/24.

U.S. Environmental Protection Agency Emissions & Generation Resource Integrated Database (eGRID) Related Materials. https://www.epa.gov/egrid/egrid-related-materials#eGRID%20PM2.5. Accessed 2/17/24.

U.S. Environmental Protection Agency. Menu of Control Measures for NAAQS Implementation. https://www.epa.gov/air-quality-implementation-plans/menu-control-measures-naaqs-implementation. Accessed 10/13/23.

U.S. Environmental Protection Agency. National Ambient Air Quality Standards. https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed 9/6/23.

U.S. Environmental Protection Agency. Particulate Matter (PM_{10}); Health and Environmental Effects of PM_{10}. https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Accessed 10/7/23.

4.5 BIOLOGICAL RESOURCES

This section provides background information regarding biological resources within the County, the regulations and programs that provide for their protection, an assessment of the potential impacts of implementing the Project, and possible mitigation measures to reduce those impacts.

ENVIRONMENTAL SETTING

The Planning Area includes the area within the City limits and the areas within a half mile of the City's boundary. This includes portions of the adjacent Francis Creek watershed, coastal agriculture lands, and upland timber and grazing areas. It is a region characterized by a blend of agricultural lands, water resources such as Francis Creek, and forested areas, including the Wildcat Hills.

Ferndale falls within the California Floristic Province and the HUC 12 sub-watershed of Salt River in the Lower Eel Planning Watershed of the South Fork Eel Planning Area, with the climate classification for the area being Warm Temperate, featuring moderate to warm temperatures on average and most precipitation occurring during winter months (TransTerra Consulting LLC. , 2023). The mountainous parts of the Planning Area are prone to high geologic instability. The City of Ferndale is mostly flat with slopes of less than 15 percent (Humboldt County, 2023).

There are three primary sources that identify habitat types relied on by this EIR to describe the biological resources of the Planning Area. These sources are:

1. The Biological Resource Assessment for the Ferndale Citywide Sewer Replacement Project which has a similar project footprint within the Ferndale City Boundary.
2. The Salt River Restoration Project EIR includes portions of the City of Ferndale and Ferndale Planning Area as well as being hydrologically connected to Francis Creek.
3. The Russ Creek and Centerville Slough Restoration Project Final Environmental Impact Report

Each of these studies apply to the Planning Area and include biological assessments that follow specific protocols from regulatory agencies such as the California Department of Fish and Wildlife (CDFW) for sensitive natural communities. The discussion is organized into the following subsections:

- Watercourses;
- Wetlands and uplands;
- Vegetation communities;
- Special status vegetation communities;
- Terrestrial biological resources;
- Aquatic biological resources; and
- Special status biological resources.

When combined, these sections provide a detailed understanding of the Planning Area's biological resources.

WATERCOURSES

Francis Creek: Francis Creek is a Class II perennial stream that flows predominantly from south to north through the Ferndale Project area. CDFW provides a watershed overview from a 2003 Stream Inventory report:

> Francis Creek is a tributary to Salt River, which is a tributary to Eel River, which is a tributary to Pacific Ocean, located in Humboldt County, California. Francis Creek is a second order stream and has approximately 5.2 miles of blue line stream according to the USGS Ferndale 7.5-minute quadrangle.

> Francis Creek drains a watershed of approximately 4.6 square miles. Elevations range from about 25 feet at the mouth of the creek to 1,000 feet in the headwater areas. Grass and mixed hardwood and conifer forests dominate the watershed. The watershed is primarily privately owned and is managed for timber production, and rangeland. The watershed is also influenced by urban and suburban development. Francis Creek flows through the town of Ferndale where it is channelized (California Department of Fish & Wildlife, 2003).

Francis Creek is a significant watercourse because of its central location in the City. Its function supporting biological resources in the City is recognized and the Project includes policies to protect those resources from the impacts of development on properties adjacent to the creek.

Francis Creek also poses specific safety challenges. According to the City of Ferndale's Drainage Master Plan Update, the creek's flood-carrying capacity is limited by various factors such as culverts, bridges, sediment build-up, and debris, necessitating annual vegetation removal to reduce flood risk (City of Ferndale, 2022). Historic flooding patterns led the City to obtain FEMA Flood Hazard Mitigation Grants for increasing the creek's flow capacity, thereby augmenting public safety and infrastructure resilience. Over the years, several phases of construction have been undertaken to enhance the creek's flow, which include channel widening, bridge replacements, and creek bank armoring. These efforts were substantially complete by September 2002 and their effectiveness was validated during the extreme storm events of December 2002 and subsequent years. In 2017, 0.5 miles of Francis Creek was restored and reconnected with the Salt River as part of the Salt River Restoration project (Redwood News, 2017). The creek underwent re-channelization along 5 miles through private ranchland leading to the Salt River removing sediment and impediments to streamflow.

Williams Creek & Reas Creek: Williams Creek and Reas Creek are watercourses situated to the east (.25 miles) and west (0.5 miles) of the Project area respectively. They are both classified as Class II streams, are tributaries to the Salt River, and are hydrologically connected to the Eel River.

The Williams Creek Headwaters are located in the upper watershed in the Wildcat Mountains. Williams Creek enters the delta area and is bounded by small residences to the west and by organic dairy farms to the east. As of 2021, Williams Creek is considered to be hydrologically dysfunctional and annually floods residences, working agricultural lands, and City of Ferndale and County infrastructure. High sediment loads carried during flood events contribute to the reduction of the creek's channel capacity and exacerbate flood impacts (Wildlife Conservation Board, 2021). Williams Creek is completely disconnected from the Salt River channel and flows across agricultural fields. Efforts are underway to restore the connectivity of Williams Creek as part of the Salt River Restoration Project.

Reas Creek is tributary to the Salt River and consists of about 3.6 stream miles. It flows north, entering the Salt River at about stream mile 4.3. A 10,000-foot section of Reas Creek is channelized downstream of Centerville Road. Varying reports about the habitat quality of Reas Creek exist ranging from CDFW assessments calling it "probably the best trout stream in the Eel Delta below the Van Duzen River" in a 2005 report, to having less than suitable conditions for salmonids due to degradation from cattle operations and road crossings in a 2004 report (Becker, 2009).

Salt River: The Salt River watershed is bordered by the Eel River to the north and east, the Pacific Ocean to the west, and the Wildcat Hills to the south. This watercourse is hydrologically connected to the Eel River estuary and was historically navigable by ocean-going ships. The Salt River provides freshwater and estuarine habitats, supporting a variety of native and non-native flora and fauna. According to the Humboldt County Resource

Conservation District (HCRCD), Salt River serves as a habitat for various bird species such as Snowy Plovers, Aleutian geese, Brant's geese, Harrier hawks, and White-Tailed Kites. Additionally, the river's estuary and freshwater waterways house aquatic marine species like top smelt and Dungeness crab, anadromous species including Coho and Chinook salmon, and freshwater species such as three-spined stickleback, sculpins, and the invasive Sacramento pikeminnow (Humboldt County Resource Conservation District, n.d.).

HCRCD goes on to describe the history of the Salt River explaining since Euro-American settlement in the 1850s, the area has experienced significant environmental degradation due to human activities like upslope mass wasting, diking, draining of tidelands, and levee construction. These activities have resulted in over 20 feet of silt accumulation, impairing the river's drainage capacity and negatively affecting both the Eel River bottoms and the City of Ferndale. To address these multifaceted challenges, a comprehensive restoration plan for the Salt River has been initiated with restoration work that is ongoing. The plan focuses on both hydrological and ecological revitalization and employs a multi-disciplinary approach implementing geomorphic assessments, stream channel design modifications, bioengineering plantings, and large wood structure installations. The first phase of this restoration was completed in 2014, with additional phases planned for the future. As of 2021, the project has restored a total of 6.2 miles of Salt River channel and floodplain and reconnected two tributaries (Reas Creek and Francis Creek), along with restoring 0.5 miles of Francis Creek (Humboldt County Groundwater Sustainability Agency, 2022).

Eel River: The Eel River is one of the major waterways in northwestern California with a significant length of approximately 196 miles. It forms a vast watershed that covers 3,684 square miles, making it the third-largest basin entirely within the state of California. The Eel River Watershed Management Area (WMA) is characterized by highly erodible soils in the steep coastal mountains, supporting diverse water uses (California State Water Resources Control Board, 2005). The primary tributaries feeding into the Eel River include the Van Duzen River, Bear River, and several creeks like Yager, Larabee, Bull, Salmon and locally the Salt River. Lake Pillsbury is situated near the headwaters. The Eel River plays an important role in the Ferndale region, serving as a source for groundwater recharge, offering recreational opportunities, and supplying water for industrial, agricultural, and municipal use among many others (Humboldt County Groundwater Sustainability Agency, 2022).

The Eel River estuary is the fourth largest estuary along the California coastline. This complex system of tidal flats, sloughs, and marshes harbors a rich diversity of flora and fauna, including migratory birds, fish, and invertebrates. The watershed is undergoing recovery from past logging activities and resource exploitation, which have had long-term ecological consequences, including soil destabilization, and altered aquifer systems (Friends of the Eel River, 2007). Conservation efforts are ongoing, particularly through the National Wild and Scenic Rivers system, which protects the river and its major tributaries. Recent initiatives like the Salt River Ecosystem Restoration Project have targeted the restoration of vital habitats and the improvement of water quality in the region.

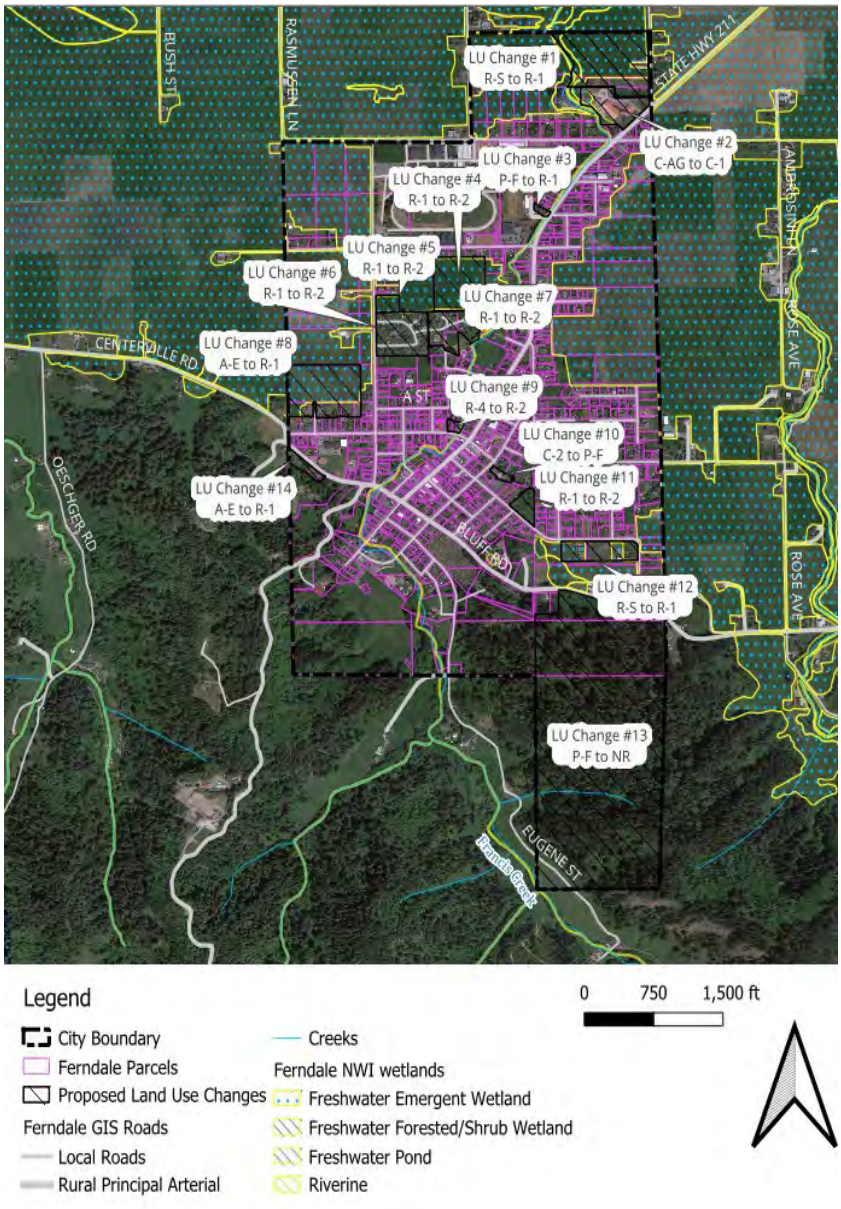
WETLANDS AND UPLANDS

The Army Corps of Engineers identifies wetlands considering three key factors: 1) areas determined to support wetland hydrology, 2) prevalence of hydrophytic vegetation, and 3) predominance of hydric soils (soil which remains saturated, flooded, or ponded long enough during the growing season to develop an anaerobic condition, thereby supporting hydrophytic vegetation (16 U.S.C. section 3801(a)(12)). Wetlands are identified using all three of these factors within the City and the upland parts of the Planning Area outside the City limits. The portion of the Planning Area within Coastal Zone uses a more restrictive set of criteria to identify wetlands – any one of the factors listed above can result in an area being classified as a wetland in the Coastal Zone.

Recognizing the importance of wetlands, Congress enacted the Emergency Wetlands Resources Act of 1986 which directs the U.S. Fish and Wildlife Service to map America's wetlands. The Service created the National Wetlands Inventory (NWI) to carry out these responsibilities. The types of wetlands that are present in the Project area according to the NWI are shown in Figure 4.5-1 and described below.

The vast majority of areas within the planning area are classified by the NWI as PEM1B and PFO1C. Both wetland types are part of the Palustrine System. According to the US Fish and Wildlife Service (USFWS) the Palustrine System encompasses a wide variety of nontidal wetlands, including those dominated by trees, shrubs, and emergent vegetation. These wetlands are characterized by specific limits on area size, water depth, and salinity. They are commonly found adjacent to lakes, rivers, and other water bodies but can also occur in isolated areas or slopes. The system includes various classes such as Rock Bottom, Unconsolidated Bottom, and Forested Wetland, among others. Their role in the ecosystem is significant, often serving as a buffer zone between upland areas and larger bodies of water (Cowardin, Carter, Golet, & LaRoe, 1979).

Figure 4.5-1: NWI Wetlands in the Planning Area



Palustrine System Wetland Classifications Occurring In the Planning Area

Emergent Wetlands (PEM1B): Dominated by rooted, erect herbaceous hydrophytes, these wetlands are characterized by saturated substrates during the growing season. They lack active wave-formed or bedrock shoreline features, which makes them particularly effective at water filtration. They also provide nesting and feeding grounds for migratory waterfowl and are key in maintaining biological diversity.

Forested Wetlands (PFO1C): These wetlands are populated by broad-leaved deciduous trees that typically reach heights of 6 meters or taller. Seasonal flooding enriches the soil, promoting a biodiverse understory of vegetation. This flooding also creates a conducive habitat for amphibians and water-dependent mammals like beavers.

Seasonally Flooded Emergent Wetlands (PEM1C): While similar to PEM1B in vegetative characteristics, these wetlands differ in their water regime. Seasonal flooding offers a dynamic environment,

making these areas important for nutrient absorption and providing seasonal breeding grounds for amphibians and fish.

Scrub-Shrub Wetlands (PSS1C): Dominated by woody vegetation less than 6 meters tall, including young trees and stunted shrubs, these wetlands are seasonally flooded. This regular inundation helps to control downstream flooding and provides important nursery habitats for fish and other aquatic life.

Unconsolidated Bottom Wetlands (PUBHx): Located near Russ Park and the Ferndale Cemetery, these wetlands are characterized by permanent flooding and substrates mostly consisting of particles smaller than stones. This stable aquatic environment supports a unique range of macroinvertebrates and bottom-dwelling fish species.

Floating Vascular Aquatic Beds (PAB4H): Also, near Russ Park and the Ferndale Cemetery, these wetlands are unique in that they are permanently flooded and dominated by floating vascular plants. These environments support a specialized set of aquatic life, including various insects and small fish, which find the floating vegetation to be a suitable habitat.

Riverine System Wetland Classifications Occurring In the Planning Area

Upper Perennial Riverine (R3UBF): Exclusive to the Francis Creek riparian area, these wetlands feature a high-gradient channel that sustains a year-round flow, except in years of extreme drought. The substrate predominantly comprises rock, cobbles, or gravel, with occasional patches of sand. The natural dissolved oxygen concentration is near saturation, making the environment conducive for various species of fish and running-water fauna.

VEGETATION COMMUNITIES

The vegetation in the Planning Area can be classified into six habitat types based on the Salt River Ecosystem Restoration Project Final EIR. The vast majority of vegetation within the Ferndale Planning area consists of agricultural grassland ruderal, non-native species within mowed or grazed pasture and ranchland with a low potential of sensitive species to occur (Humboldt County Resource Conservation District, 2011). These species, while not native to the area, have adapted to local conditions and are often prevalent in disturbed or altered landscapes.

1. Agricultural Grassland: Low-lying, well-drained agricultural pastureland in the Ferndale uplands.

Habitat Description: Agricultural grasslands are human-managed ecosystems primarily utilized for livestock grazing (Vickery et al., 2001). The source goes on to describe these lands are typically composed of various grass species, along with other plants such as clover and alfalfa, which provide a nutrient-rich soil base. While their primary function is agricultural, they have evolved to support a diverse range of flora and fauna. These landscapes often exist in areas where natural grasslands or pastures have been modified for agricultural purposes. They often feature a mixture of native and introduced plant species and may sometimes be subjected to practices like mowing, fertilization, and irrigation to optimize them for agricultural use.

Vegetation: Dominated by Kentucky bluegrass (Poa pratensis), perennial ryegrass (Lolium perenne), saltgrass (Distichlis spicata), common velvet grass (Holcus lanatus), creeping bentgrass (Agrostis stonolifera), reed canary grass (Phalaris arundinacea), and common oat (Avena sativa). Ruderal species include poison hemlock (Conium maculatum), bull thistle (Cirsium vulgare) and others.

2. Ruderal: Ruderal species are common in disturbed areas within the pastureland. This vegetation community is dominated by invasive non-native species.

Habitat Description: Ruderal habitats are areas of disturbed land often impacted by human activities such as construction, agriculture, and road development. These habitats are typically dominated by invasive and non-native species, such as wild radish and velvet grass. Despite their disturbed nature, ruderal areas often serve as important refuges for generalist wildlife species that can thrive in a range of environmental conditions. The soil in these habitats is often compacted or eroded, but this does not deter resilient plant species from taking root (Hobbs, R. J., & Huenneke, L. F., 1992).

Vegetation: Includes wild radish (Raphanus sativa), velvet grass (Holcus lanatus), bull thistle (Cirsium vulgare), poison hemlock (Conium maculatum), bird's foot trefoil (Lotus corniculatus), and English plantain (Plantago lanceolata).

3. Scrub-Shrub: Forms distinct row cover along drainage areas and fence lines.

Habitat Description: Scrub-shrub habitats consist primarily of woody plants that are shorter than typical forest trees. Species like sagebrush and chaparral are commonly found here. These habitats are often transitional zones between different types of ecosystems, such as forests and grasslands, providing a unique niche for a variety of animal species. The limited vertical structure also allows for abundant sunlight, which supports a rich understory of plants (Keeley, J. E., & Fotheringham, C. J., 2001).

Vegetation: Consists of California rose (Rosa californica), Himalayan and California blackberry (Rubus armeniacus and R. ursinus), coyote brush (Baccharis pilularis), and poison oak (Toxicodendron diversilobium).

4. Seasonal Wetlands: Vegetated by a variety of plant species, more diverse in the wet season.

Habitat Description: Seasonal wetlands are unique ecosystems that are wet only during specific periods, typically corresponding to seasons with higher precipitation. They host specialized plant species that can survive both inundation and drying, and they provide crucial breeding grounds for amphibians and waterfowl. These ecosystems are highly dynamic, with water levels and species composition changing throughout the year (Mitsch, W. J., & Gosselink, J. G., 2007).

Vegetation: Includes spikerush (Eleocharis macrostachya), small field bulrush (Scirpus microcarpus), common rush (Juncus effusus), spreading rush (Juncus patens), field horsetail (Equisetum arvense), Pacific silverweed (Potentilla anserina), and more.

5. Riparian Scrub and Forest: Located along the Francis Creek waterway in the Project area.

Habitat Description: Riparian scrub and forest areas are found along the banks of rivers and streams. These habitats have a high-water table and are rich in species diversity. They often feature a mix of shrubs and trees and are essential for protecting water quality and providing habitat for a variety of aquatic and terrestrial species. Additionally, these zones often serve as corridors for animal movement, linking fragmented habitats (Naiman, 2005).

Vegetation: Dominated by arroyo willow (Salix lasiolepis), Pacific willow (Salix lasiandra), and Sitka willow (Salix sitchensis). Other species include red alder (Alnus rubra), black cottonwood (Populus balsamifera ssp. trichocarpa), California blackberry, thimbleberry (Rubus parviflorus), and more.

6. Freshwater Marsh: Characterized by emergent vegetation.

Habitat Description: Freshwater marshes are wetlands located near the edges of rivers and lakes. They are characterized by soft-stemmed vegetation adapted to saturated soil conditions. These habitats are rich in

biodiversity, offering a vital breeding ground for birds, as well as habitat for many aquatic species. Their water-filtering capacity also makes them integral to maintaining water quality in adjacent aquatic systems (Batzer, D. P., & Sharitz, R. R. (Eds.), 2006).

Vegetation: Includes Bull tule (Scirpus robustus), creeping spike rush (Eleocharis palustris), and common rush (Juncus effusus).

SPECIAL STATUS VEGETATION COMMUNITIES

Special Status species exist within a vegetation community or ecological community that have a conservation status based on their rarity or vulnerability. The species listed below are identified as threatened or endangered under the Federal Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544) or the California Department of Fish and Wildlife's (CDFW) California Endangered Species Act (CESA) (Cal. Fish & Game Code §§ 2050-2116) and in the case of botanicals, the Native Plant Protection Act (NPPA) (Cal. Fish & Game Code §§ 1900-1913).

A California Natural Diversity Database (CNDDB) 9-quad search was used to create the list below (TransTerra Consulting LLC., 2023; Humboldt County Resource Conservation District, 2011). Table 4.5-1 lists 36 potentially extant special status plants, one moss, and one lichen. This data was chosen based upon direct proximity to the Project site and because large portions of the Salt River Restoration project have analogous vegetation communities that exist within the City of Ferndale boundary.

The table displays regulatory status and a brief description of special-status plant species that have the potential to occur within the Project area according to vegetation communities within the Ferndale Planning area as previously discussed. As stated previously, botanical surveys may need to be completed when seasonally appropriate to determine the presence of the species below or others that may not be included within Table 4.5-1.

The regulatory status key for Table 4.5-1 employs a series of abbreviations to indicate the conservation status of listed plant species. These abbreviations are based on criteria set by the California Native Plant Society (CNPS) and other recognized conservation organizations. The designation "E" indicates a species that is classified as "Endangered." List 1B:1 refers to species that are endangered both in California and elsewhere and seriously threatened in California and List 1B:2 refers to species that are fairly endangered both in California and elsewhere. Conversely, List 2:2 denotes species that are fairly endangered in California but more common in other regions. List 3 is reserved for species requiring further investigation and is known as the "Review List," while List 4 refers to plants with a limited distribution, also known as the "Watch List." List 4 is further divided into two subcategories: List 4:2, indicating species that are fairly endangered in California, and List 4:3, which signifies species that are not very endangered within the state. Potential associated habitats and blooming periods are also included providing a guide for any potential biological surveys to establish presence of sensitive botanicals.

Table 4.5-1: Special Status Plant Species Potentially Extant in the Ferndale Planning Area

No.	Species Name (Scientific, Common)	Regulatory Status* (Federal/ State/CNPS)	Potential Habitat in Project Area	Blooming Period
1	Lilium Occidentale (Western Lily)	E/E/List 1B.1	Marshes and swamps (freshwater), North Coast coniferous forest	Jun---Jul

No.	Species Name (Scientific, Common)	Regulatory Status* (Federal/ State/CNPS)	Potential Habitat in Project Area	Blooming Period
2	Lycopodium Clavatum (Running Pine)	---/---/List 4.1	Lower montane coniferous forest (mesic), Freshwater marshes and swamps, North Coast coniferous forest (mesic)/often edges, openings, and roadsides	Jun---Aug
3	Sidalcea Malachroides (Maple-Leaved Checkerbloom)	---/---/List 4.2	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland/often in disturbed areas	Apr---Aug
4	Stellaria Obtusa (Obtuse Starwort)	---/---/List 4.3	Riparian woodland	May---Sep (Oct)
5	Sea Watch (Angelica lucida)	---/---/List 4.2	Marshes and swamps (coastal salt)	May---Sept
6	Coastal Marsh Milk-vetch (Astragalus pycnostachyus var. pycnostachyus)	---/---/List 1B.2	Marshes and swamps (coastal salt, streamsides)	Apr---Oct
7	Buxbaum's Sedge (Carex buxbaumii)	---/---/List 4.2	Marshes and swamps	Mar---Aug
8	Bristle-stalked Sedge (Carex leptalea)	---/---/List 2.2	Marshes and swamps	Mar---Jul
9	Lyngbye's Sedge (Carex lyngbyeii)	---/---/List 2.2	Marshes and swamps (brackish or freshwater)	May---Aug
10	Humboldt Bay Owl's-Clover (Castilleja ambigua ssp. humboldtiensis)	---/---/List 1B.2	Marshes and swamps (coastal salt)	Apr---Aug
11	Point Reyes Bird's-Beak (Cordylanthus maritimus ssp. palustris)	---/---/List 1B.2	Marshes and swamps (coastal salt)	Jun---Oct
12	Small Spikerush (Eleocharis parvula)	---/---/List 4.3	Marshes and swamps	(Apr) Jun--- Aug (Sep)
13	Pacific Gilia (Gilia capitata ssp. pacifica)	---/---/List 1B.2	Valley and foothill grassland	Apr---Aug
14	Bristly Leptosiphon (Leptosiphon acicularis)	---/---/List 4.2	Valley and foothill grassland	Apr---Jul
15	*Lycopus uniflorus* Northern bugleweed	---/---/List 4.3	Marshes and swamps	Jul---Sep
16	Northern Bugleweed (Lycopus uniflorus)	---/---/List 4.2	North Coast coniferous forest, Riparian forest/mesic	Apr---Aug
17	Dwarf Alkali Grass (Puccinellia pumila)	---/---/List 2.2	Marshes and swamps (coastal salt)	Jul
18	Hitchcock's Blue-Eyed Grass (Sisyrinchium hitchcockii)	---/---/List 1B.1	Valley and foothill grassland	Jun
19	Western Sand-Spurrey (Spergularia canadensis var. occidentalis)	---/---/List 2.1	Marshes and swamps (coastal salt)	Jun---Aug

No.	Species Name (Scientific, Common)	Regulatory Status* (Federal/ State/CNPS)	Potential Habitat in Project Area	Blooming Period
20	Beach Starwort (Stellaria littoralis)	---/---/List 4.2	Marshes and swamps	Mar---Jul
21	Slender Silver Moss (Anomobryum julaceum)	---/---/List 2.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts	No flowering season
22	Rattan's Milk Vetch (Astragalus rattanii var. rattanii)	---/---/List 4.3	Lower montane coniferous forest/gravelly streambanks	Apr---Jul
23	Streamside Daisy (Erigeron biolettii)	---/---/List 3	North Coast coniferous forest/rocky, mesic	Jun---Oct
24	Coast Fawn Lily (Erythronium revolutum)	---/---/List 2.2	North Coast coniferous forest/mesic, streambanks	Mar---Jul (Aug)
25	Howell's Montia (Montia howellii)	---/---/List 2.2	North Coast coniferous forest, Vernal pools/vernally mesic, sometimes roadsides	Mar---May
26	Seacoast Ragwort (Packera bolanderi var. bolanderi)	---/---/List 2.2	North Coast coniferous forest/sometimes roadsides	(Feb---Apr) May---Jul
27	Trailing Black Currant (Ribes laxiflorum)	---/---/List 4.3	North Coast coniferous forest/sometimes roadside	Mar---Jul (Aug)
28	Slender False Lupine (Thermopsis gracilis var. gracilis)	---/---/List 4.3	North Coast coniferous forest/sometimes roadsides	Mar---Jul
29	Long Beard Lichen (Usnea longissima)	---/---/List 4	Humid, foggy coniferous forests	NA
30	Point Reyes Bird's-Beak (Chloropyron maritimum ssp. palustre)	-/-/-/List 1B.2	Marshes and swamps (coastal salt)	Jun-Oct
31	Whitney's Farewell-To-Spring (Clarkia amoena ssp. whitneyi)	-/-/-/List 1B.1	Coastal bluff scrub, Coastal scrub	Jun-Aug
32	Cascade Downingia (Downingia willamettensis)	-/-/-/List 2B.2	Cismontane woodland (lake margins), Valley and foothill grassland (lake margins), Vernal pools	Jun-Jul(Sep)
33	Menzies' Wallflower (Erysimum menziesii)	-/-/CE FE	Coastal dunes	Mar-Sep
34	Glandular Western Flax (Hesperolinon adenophyllum)	-/-/-/List 2B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	May-Aug
35	Howell's Montia (Montia howellii)	-/-/-/List 2.2	Meadows and seeps, North Coast coniferous forest, Vernal pools	Mar-May
36	Wolf's Evening-Primrose (Oenothera wolfii)	-/-/CE FE	Coastal dunes	May-Oct
37	Tracy's Romanzoffia (Romanzoffia tracyi)	-/-/-/List 2B.3	Coastal bluff scrub, Coastal scrub	Mar-May

No.	Species Name (Scientific, Common)	Regulatory Status* (Federal/ State/CNPS)	Potential Habitat in Project Area	Blooming Period
38	Coast Checkerbloom (Sidalcea oregana ssp. eximia)	-/-/-/List 1B.2	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Jun-Aug

*Regulatory status abbreviations are as follows:

CNPS= California Native Plant Society
E= Endangered
List1B:1. Rare, threatened, or endangered in California and elsewhere; seriously threatened in California.
List1B:2. Fairly endangered in California and elsewhere.
List 2:2. Fairly endangered in California, but more common elsewhere.
List 3: Needs more information (Review List).
List 4. Limited distribution (Watch List)
List 4:2. Limited distribution (Watch List), fairly endangered in California.
List 4:3. Limited distribution (Watch List), not very endangered in California.

TERRESTRIAL BIOLOGICAL RESOURCES

Terrestrial biological resources encompass a variety of habitat types, each contributing distinctively to the local ecosystem. These habitats correspond to land cover classifications found in the City of Ferndale, including tidal marshes, aquatic areas, willow-alder riparian forests and scrubs, freshwater marshes, agricultural grasslands (pastures), seasonal wetlands, scrub-shrub habitats, ruderal zones, and developed regions. The information presented here is sourced from Tables 4 through 9 of the Salt River EIR, which are associated with the different habitat types that are likely present within the City of Ferndale.

1. Agricultural Grassland (or Pastureland):

Agricultural pasturelands within the Project area serve multifaceted roles in the ecosystem, transcending their primary function as grazing lands for domesticated livestock. Over time, these pasturelands have evolved into diverse habitats that are integral to local ecology. They provide a myriad of resources such as food, shelter, and nesting sites, thus supporting a broad range of wildlife species. From mammals and birds to reptiles and insects, the pasturelands have become dynamic ecological niches. These areas also act as natural filters for water runoff, which benefits both agricultural activities and native wildlife. Moreover, they serve as temporary stopover points for migratory species, offering sustenance and respite (Benton, T. G., Vickery, J. A., & Wilson, J. D., 2003).

Mammals such as the California vole (Microtus californicus), Pacific shrew (Sorex pacificus) and coast mole (Scapanus orarius) find dense, grassy terrain conducive for both burrowing and foraging activities. For avian species, the pasturelands offer distinct advantages. Expansive, open fields provide an optimal environment for aerial hunting, benefitting insectivorous birds like tree, cliff, and barn swallows (Tachycineta bicolor) (Petrochelidon pyrrhonota) (Hirundo rustica), as well as raptors including the white-tailed kite (Elanus caeruleus), northern harrier (Circus cyaneus), peregrine falcon (Falco peregrinus), red-tailed hawk (Buteo jamaicensis), barn owl (Tyto alba), and turkey vulture (Cathartes aura). In addition, the availability of seeds and berries in these areas attracts passerine birds such as the Savannah sparrow, and both red-winged and Brewer's blackbirds. Agricultural grasslands serve as an essential stopover for migratory birds including the long-billed curlew (Numenius americanus) and marbled godwit (Limosa fedoa), offering them necessary resources for both feeding and temporary respite during their migratory journeys.

During periods of significant precipitation, portions of the pasturelands undergo temporary inundation, resulting in transient marsh-like conditions. This environmental shift attracts a variety of species, particularly those adapted

to wet conditions like herons, egrets, and various shorebirds. The inundated areas provide ideal conditions for hunting fish and invertebrates, thus enriching the ecological diversity of the pastureland.

Table 4.5-2: Terrestrial Species Associated with Agricultural Grassland Habitat

Type	Potential Terrestrial Wildlife	Scientific Name
Mammals	California vole	Microtus californicus
Mammals	Pacific shrew	Sorex pacificus
Mammals	Coast mole	Scapanus orarius
Birds	Tree Swallow	Tachycineta bicolor
Birds	Cliff Swallow	Petrochelidon pyrrhonota
Birds	Barn Swallow	Hirundo rustica
Birds	Eurasian Collared-Dove	Streptopelia decaocto
Birds	Savannah Sparrow	-
Birds	Red-Winged Blackbird	-
Birds	Brewer's Blackbird	-
Birds	White-Tailed Kite	Elanus caeruleus
Birds	Northern Harrier	Circus cyaneus
Birds	Peregrine Falcon	Falco peregrinus
Birds	Red-Tailed Hawk	Buteo jamaicensis
Birds	Barn Owl	Tyto alba
Birds	Turkey Vulture	Cathartes aura
Shorebirds	Long-Billed Curlew	Numenius americanus
Shorebirds	Marbled Godwit	Limosa fedoa
Shorebirds	Common Snipe	Gallinago gallinago
Shorebirds	Dunlin	Calidris alpina
Shorebirds	Whimbrels	Numenius phaeopus
Shorebirds	Least Sandpiper	Calidris minutilla
Shorebirds	Western Sandpiper	Calidris mauri
Shorebirds	Greater Yellowlegs	Tringa melanoleuca
Shorebirds	Black-Bellied Plover	Pluvialis squatarola
Shorebirds	Killdeer	Charadrius vociferous

2. Ruderal

These habitats primarily support widespread and common wildlife species that are tolerant of disturbed conditions. The term "tolerant of disturbed conditions" signifies that these animals are highly adaptable and can thrive in environments that have been altered or impacted by human activities. In ruderal habitats, human-made alterations often include road construction, soil disruption, and the introduction of non-native plant species. These conditions usually prove to be challenging for more specialized and sensitive species but provide new ecological niches for generalist and opportunistic animals. Animals like raccoons (Procyon lotor), for example, exhibit diverse diets and behaviors that allow them to exploit human-affected landscapes effectively. The ruderal areas thus act as refuge zones for such wildlife, offering them an array of food resources and shelter options that may not be available in more pristine environments (Timm, R. M., 1983). Mammalian species commonly found include coyotes (Canis latrans), house mice (Mus musculus), black rats (Rattus rattus), deer mice (Peromyscus maniculatus), striped skunks (Mephitis mephitis), raccoons (Procyon lotor), opossums (Didelphis virginiana), and feral cats (Felis catus).

Avian species that frequent ruderal habitats include house finch (Carpodacus mexicanus), American goldfinch (Carduelis tristis), red-winged blackbirds (Agelaius phoeniceus), Brewer's blackbirds (Euphagus cyanocephalus), and savannah sparrows (Passerculus sandwichensis).

Reptiles and amphibians are relatively sparse but include Pacific tree frogs (Hyla regilla), garter snakes (Thamnophis sirtalis), and western fence lizards (Sceloporus occidentalis). This ruderal habitat may also be utilized by other wildlife, such as black-tailed deer (Odocoileus sp.) and porcupine (Erethizon dorsatum).

Table 4.5-3: Terrestrial Species Associated with Ruderal Habitat

Type of Animal	Common Name	Scientific Name
Mammals	Coyote	Canis latrans
Mammals	House Mouse	Mus musculus
Mammals	Black Rat	Rattus rattus
Mammals	Deer Mouse	Peromyscus maniculatus
Mammals	Striped Skunk	Mephitis mephitis
Mammals	Raccoon	Procyon lotor
Mammals	Opossum	Didelphis virginiana
Mammals	Feral Cat	Felis catus
Mammals	Black-Tailed Deer	Odocoileus sp.
Mammals	Porcupine	Erethizon dorsatum
Birds	House Finch	Carpodacus mexicanus
Birds	American Goldfinch	Carduelis tristis
Birds	Red-Winged Blackbird	Agelaius phoeniceus
Birds	Brewer's Blackbird	Euphagus cyanocephalus
Birds	Savannah Sparrow	Passerculus sandwichensis
Reptiles	Garter Snake	Thamnophis sirtalis
Reptiles	Western Fence Lizard	Sceloporus occidentalis
Amphibians	Pacific Tree Frog	Hyla regilla

3. Scrub-Shrub

The scrub-shrub habitat within the panning area exhibits specific characteristics that influence the type of wildlife it supports. Its relatively narrow and linear structure, typically adjacent to agricultural fields, limits the range of species that inhabit this environment. Despite its limitations in spatial diversity, it hosts a modest variety of bird species. From this habitat in the neighboring Salt River Restoration project identified multiple avian species including the wrentit (Chamaea fasciata), orange-crowned warbler (Vermivora celata), Wilson's warbler (Wilsonia pusilla), as well as song (Melospiza melodia) and white-crowned (Zonotrichia leucophrys) sparrows (Humboldt County Resource Conservation District, 2011). The availability of seeds and berries attract passerine birds such as the house finch and American goldfinch to these areas.

In addition to avian fauna, the scrub-shrub habitat is likely to support a limited population of mammals, predominantly in the rodent category. House mice, for instance, are commonly observed to make their home in this environment. Although the habitat's narrow and linear form restricts its ability to support a broader spectrum of wildlife, the species that do inhabit the area are generally well-adapted to the conditions it offers.

Table 4.5-4: Terrestrial Species Associated with Scrub-Shrub Habitat

Type of Animals	Common Name	Scientific Name
Birds	Wrentit	Chamaea fasciata

Type of Animals	Common Name	Scientific Name
Birds	Orange-crowned Warbler	Vermivora celata
Birds	Wilson's Warbler	Wilsonia pusilla
Birds	Song Sparrow	Melospiza melodia
Birds	White-crowned Sparrow	Zonotrichia leucophrys
Birds	House Finch	Carpodacus mexicanus
Birds	American Goldfinch	Spinus tristis
Mammal	House Mice	Mus musculus

4. Seasonal Wetlands

Seasonal wetlands within the Project area are highly dynamic habitats, displaying considerable variation in both flora and fauna depending on multiple factors such as the duration of water retention and the type of vegetation present. Wetlands not only serve as habitats but also perform ecological services such as water filtration and providing transitional zones that host unique biodiversity (Zedler, Joy B. and Kercher, Suzanne, 2005). Their role in the overall health of the ecosystem cannot be understated. The biological diversity in these wetlands is often greater than in adjacent flooded pastures due to the richness of wetland-specific vegetation. While many species that inhabit flooded pastures can also be found in these seasonal wetlands, a number of additional species make these wetlands their home, particularly when water is present.

Amphibians like the Pacific treefrog (Pseudacris regilla) are known to frequent these areas, breeding in them if conditions are appropriate. Garter snakes of various species (Thamnophis spp.) also find their way to these wetlands, as do Northern red-legged frogs (Rana aurora aurora). These amphibians not only contribute to biodiversity but also serve as indicators of the wetland's ecological health.

Small mammals such as rodents and insectivores inhabit the vegetated sections of the seasonal wetlands. These smaller mammals act as a vital food source for predatory birds and mammals. Notable birds that are more commonly found in seasonal wetlands than in flooded pastures include the green heron (Butorides virescens), common yellowthroat (Geothlypis trichas), and marsh wren. These avian species often rely on the specialized vegetation of the wetlands for nesting and foraging.

Table 4.5-5: Terrestrial Species Associated with Seasonal Wetlands

Type of Animal	Common Name	Scientific Name
Amphibians	Pacific Treefrog	Pseudacris regilla
Amphibians	Northern Red-Legged Frog	Rana aurora aurora
Birds	Green Heron	Butorides virescens
Birds	Common Yellowthroat	Geothlypis trichas
Birds	Marsh Wren	Not specified
Mammal	Black-Tailed Deer	Odocoileus sp.
Reptile	Garter Snakes	Thamnophis spp.

5. Riparian Scrub Forest

The riparian scrub and forest habitats lining the Francis Creek corridor are of high value to wildlife due to their role in providing essential resources and diverse ecological niches. This habitat type offers a unique combination of water, vegetation, and shelter that attracts a wide range of species. Riparian areas serve as crucial zones for nesting, foraging, and seeking refuge, especially for migratory birds, making them vital hubs for sustaining biodiversity and supporting various life stages of wildlife (United States Geological Survey, 2000). Notably, these

habitats play a crucial role in hosting neotropical migrants like Bullock's oriole (Icterus bullockii), which are likely to breed on the site, as well as seasonal visitors like MacGillivray's warbler (Oporonis tolmiei) and winter residents such as the golden-crowned sparrow (Zonotrichia atricapilla). The habitat also accommodates resident species such as the black-capped chickadee (Parus atricapillus).

Characteristic bird species of robust willow habitat include Swainson's thrush (Catharus ustulatus), Wilson's warbler, yellow warbler (Dendroica petechia), and Bullock's oriole. Importantly, the habitat supports the presence of the willow flycatcher (Empidonax traillii), an endangered species in California, even though it primarily occurs as a rare migrant on the site. While the likelihood of it becoming a breeding species remains uncertain, the potential cannot be dismissed. Beyond avian inhabitants, the riparian areas extend their significance to other wildlife categories as well. A variety of reptiles and amphibians flourish within these habitats, and a range of mammal species utilize the resources and shelter provided by the riparian ecosystem. Collectively, the riparian scrub and forest habitats along the Francis Creek corridor stand as invaluable components of the landscape, fostering a diverse community of species that rely on its resources.

Table 4.5-6: Terrestrial Species Associated with Riparian Scrub Forest

Type of Animal	Common Name	Scientific Name
Birds	Bullock's Oriole	Icterus bullockii
Birds	MacGillivray's Warbler	Oporonis tolmiei
Birds	Golden-crowned Sparrow	Zonotrichia atricapilla
Birds	Black-capped Chickadee	Parus atricapillus
Birds	Swainson's Thrush	Catharus ustulatus
Birds	Wilson's Warbler	
Birds	Yellow Warbler	Dendroica petechia
Birds	Willow Flycatcher (Migrant)	Empidonax traillii

6. Freshwater Marsh

The freshwater marsh's ability to support diverse wildlife is attributed to its water-rich environment, varied vegetation, and abundant food sources, making it an attractive habitat for a wide range of species. Wetlands like freshwater marshes provide essential breeding, feeding, and sheltering grounds for various wildlife due to their unique hydrological and ecological characteristics (Zedler, Joy B. and Kercher, Suzanne, 2005).

This habitat draws in a menagerie of avian inhabitants, including the American bittern (Botaurus lentiginosus), red-winged blackbird (Agelaius phoeniceus), marsh wren (Cistothorus palustris), pied-billed grebe (Podilymbus podiceps), American coot (Fulica americana), great blue heron, great egret (Ardea alba), snowy egret (Egretta thula) and cinnamon teal (Anas cyanoptera). Freshwater marsh's water-rich environment is known to attract a plethora of other migratory species of waterfowl. Birds are drawn to the marsh's abundant food resources, nesting grounds, and suitable conditions for their diverse behaviors and characteristics.

In addition to the avian population, the freshwater marsh also supports the presence of river otters (Lutra canadensis), which thrive in the wetland's aquatic habitat. The marsh also becomes a haven for sensitive species such as Red-legged frogs (Rana aurora), a species that has been observed within this ecosystem. Together, the freshwater marsh's intricate balance of water and vegetation fosters an environment for both resident and migratory species.

Table 4.5-7: Terrestrial Species Associated with Freshwater Marsh Habitat

Type of Animal	Common Name	Scientific Name
Birds	American Bittern	Botaurus lentiginosus
Birds	Red-winged Blackbird	Agelaius phoeniceus
Birds	Marsh Wren	Cistothorus palustris
Birds	Pied-billed Grebe	Podilymbus podiceps
Birds	American Coot	Fulica americana
Birds	Great Blue Heron	Ardea herodias
Birds	Great Egret	Ardea alba
Birds	Snowy Egret	Egretta thula
Birds	Cinnamon Teal	Anas cyanoptera
Mammals	River Otters	Lutra canadensis
Amphibians	Red-legged Frog	Rana aurora

AQUATIC BIOLOGICAL RESOURCES

Aquatic biological resources in the coastal streams of Humboldt County, particularly those in Francis Creek within and downstream of the City of Ferndale, serve as crucial components in maintaining a complex and varied ecosystem. These water bodies are host to a wide array of aquatic species, each contributing significantly to the region's overall biodiversity and ecological equilibrium.

Francis Creek's habitat has undergone significant changes over time. Streams originating from the Wildcat Hills and flowing into the Salt River are historically essential for migration, spawning, and rearing of aquatic species. Yet, these tributaries have faced considerable degradation throughout the 20th century. Historical surveys in the late 1930s documented excellent spawning areas, good pools and shelter and abundant fish in Francis and other neighboring creeks. Land use practices such as timber harvesting, construction of roads and livestock grazing resulted in excessive erosion, sedimentation and infill of significant parts of the creek and overall degradation of habitat (Humboldt County Resource Conservation District, 2011).

The habitat quality of Francis Creek is thought to be improving through active restoration efforts in and near Ferndale. The return of Coho salmon in 2006 is considered a major success and generally improving based on recent restoration projects such as the re-channelization of a 0.5 mile stretch leading to the Salt River as part of the Salt River Restoration Project (U.S. Environmental Protection Agency Region IX, 2007). Future channel restoration plans include two distinct segments downstream of the planning area. The first, a 0.5-mile stretch between Riverside Ranch and Port Kenyon/Dillon Road Bridge, will restore 8 acres of riparian forest, 6 acres of wetland, and 3 acres of aquatic habitat. The second segment, will restore 1 mile between Port Kenyon and Francis Creek, restoring 30.3 acres of riparian forest, 11.3 acres of freshwater marsh and seasonal wetland and 7.9 acres of aquatic habitat[1] (California Natural Resources Agency, 2015). Sediment Management Areas are planned for the Dillon Road to Francis Creek reach and at the confluence of Francis Creek and Salt River.

The aquatic ecosystems of Francis Creek host an array of freshwater species within the main channel that passes through the City and anadromous and possibly estuarine species downstream of the Project area toward the Salt River that are of both ecological and conservation interest. CDFW's 2003 Stream Inventory Report, results of the CNDDB Database 9-quad Search as part of the Biological Resource Assessment for the Ferndale Citywide Sewer Replacement Project, and the species inventory of the Salt River Ecosystem Restoration Project Final EIR aquatic

biological resources section were used to develop an inventory that shows presence or likely presence of fish and amphibian species within the Project area (Table 4.5-8).

Fish such as Pacific lamprey (Lampetra tridentata) and western brook lamprey (Lampetra richardsoni) spawn in the freshwater streams of Francis Creek and have been observed during surveys. Similarly, the coho salmon (Oncorhynchus kisutch pop. 2) of the Southern Oregon/Northern California ESU are known to use the waters of Francis Creek for spawning and rearing. Steelhead (Oncorhynchus mykiss irideus pop. 16) are another anadromous species that use this creek as a migration route and spawning ground and are a specific population of steelhead that has been studied or is being managed separately from other populations of the same species. Additional species such as Three-spined Stickleback (Gasterosteus aculeatus), California roach (Hesperoleucas symmetricus) and Humboldt sucker (Catostomus occidentalis humboldtiensis) are likely found within Francis Creek. Freshwater-adapted species like the brown bullhead (Ameiurus nebulosus) and Sacramento pikeminnow (Ptychocheilus grandis) are non-native species that find suitable conditions in the Eel River ecosystem.

Francis Creek, small ponds like Russ Pond, and freshwater emergent wetlands also provide a suitable environment for amphibians like the Northern red-legged frog (Rana aurora) and the Foothill yellow-legged frog (Rana boylii). These species usually prefer freshwater marsh habitats and are sensitive to changes in water quality, thereby serving as valuable bio-indicators. Rhyacotriton variegatus, the Southern torrent salamander, finds its home in the cooler, well-shaded areas of the creek.

Table 4.5-8: Species Associated with Aquatic Resources in the Project Area

Type of Animal	Common Name	Scientific Name	General Habitat
Fishes	Pacific lamprey	Lampetra tridentata	Freshwater streams
Fishes	Western brook lamprey	Lampetra richardsoni	Freshwater streams
Fishes	Tidewater goby	Eucyclogobius newberryi	Brackish waters
Fishes	Cutthroat trout	Oncorhynchus clarkii clarkii	Freshwater streams
Fishes	Coho salmon (SO/NCA ESU)	Oncorhynchus kisutch pop. 2	Freshwater to marine
Fishes	Steelhead	Oncorhynchus mykiss irideus pop. 16	Freshwater to marine
Fishes	Three Spined Stickleback	Gasterosteus aculeatus	Freshwater to brackish
Fishes	Longfin smelt	Spirinchus thaleichthys	Estuarine waters
Fishes	California roach	Hesperoleucas symmetricus	Freshwater streams
Fishes	Humboldt sucker	Catostomus occidentalis humboldtiensis	Freshwater habitats
Fishes	Brown bullhead	Ameiurus nebulosus	Freshwater ponds
Fishes	Sacramento pikeminnow	Ptychocheilus grandis	Freshwater streams
Amphibians	Northern red-legged frog	Rana aurora	Freshwater marshes
Amphibians	Foothill yellow-legged frog	Rana boylii	Riverbanks
Amphibians	Southern torrent salamander	Rhyacotriton variegatus	Freshwater streams
Amphibians	Pacific Treefrog	Pseudacris regilla	Freshwater wetlands, ponds, and streams
Amphibians	Rough-skinned Newt	Taricha granulosa	Forested areas, streams, and ponds
Amphibians	Western Toad	Anaxyrus boreas	Forests, meadows, and wetlands
Amphibians	Ensatina Salamander	Ensatina eschscholtzii	Woodlands, forests, and moist areas

SPECIAL STATUS BIOLOGICAL RESOURCES

The term "special-status species" refers to a range of plant and animal species that have received regulatory attention due to their conservation needs, ecological significance, and/or rarity. These species may be federally listed as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544) or protected under the Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712) by the U.S. Fish and Wildlife Service (USFWS). In California, species can also be designated under state-specific legislation such as the California Endangered Species Act (CESA) (Cal. Fish & Game Code §§ 2050-2116) by the California Department of Fish and Wildlife (CDFW). These designations are commonly triggered by concerns like declining population numbers, habitat loss, or other existential threats, thereby activating specific legal and policy measures aimed at conservation.

The identification of special status biological resources within terrestrial and aquatic areas hydrologically connected to the planning area are derived from both special status biota observed in, or likely to be observed in, the neighboring Russ Creek and Centerville Slough Restoration Project and Salt River Restoration Project. These projects' lists of special status wildlife are derived from a variety sources, including government databases such as the California Natural Diversity Database (CNDDB) and scientific publications. Species in Table 4.5-9 are also derived from Biological Resources Assessment for the Ferndale Citywide Sewer Replacement Project California Natural Diversity Database (CNDDB) 9-quad search with a particular focus on the central United States Geological Survey (USGS) 7.5-minute quadrangle in Ferndale.

Table 4.5-9 identifies special-status terrestrial biological resources using a set of abbreviations to indicate their conservation status including:

- FT/FE (Federally Threatened/Endangered): Indicates that the species is officially listed under the federal ESA, facing risks that may lead to its extinction or could reduce its numbers, distribution, or habitat such that it becomes endangered.
- ST/SE (State Threatened/Endangered): Signifies that the species has been officially listed under CESA, acknowledging that it faces threats that could affect its survival within the state of California.
- CSCS (California Special Concern Species): An acknowledgment by the CDFW (CDFW) that the species, while not officially listed, faces potential threats that could result in it becoming endangered or extinct.
- WL (Watch List): Suggests that the species may not be immediately threatened but is subject to ongoing monitoring due to concerns about its status and potential threats.
- N (None): Indicates that the species is currently not under any recognized threat or protection.
- SCL (State Candidate for Listing): Identifies that the species is under review by state authorities for possible inclusion in the State's list of endangered or threatened species.

Table 4.5-9: Special Status Species Potentially Occurring Within the Planning Area

No.	Species / Occurrence	Regulatory Status* (Federal/State)	Habitat
Birds			
1	Burrowing Owl (*Athene cunicularia*); moderate potential to occur	N/CSCS	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available rodent burrows
2	Vaux's Swift (*Chaetura vauxi*); high potential to occur	N/CSCS	Nests in large cavities in trees, including redwoods and sycamores, and sometimes in artificial structures such as chimneys. Prefers redwood and Douglas fir forests.
3	Western Snowy Plover (*Charadrius alexandrinus nivosus*); low potential to occur.	FT/CSCS	Breed and winter along ocean beaches and the gravel bars of the Eel River.
4	Mountain Plover (*Charadrius montanus*); low potential to occur.	N/CSCS	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms.
5	Northern Harrier (*Circus cyaneus*); high potential to occur	N/CSCS	(Nesting) Coastal salt marsh and freshwater marsh; nests and forages in grasslands; nests on ground in shrubby vegetation, usually at marsh edge.
6	Yellow warbler (*Dendroicha petechia*); moderate potential to occur	N/SSC	Riparian habitat often dominated by willows, near water in streams and wet meadows
7	White Tailed Kite (*Elanus caeruleus*); high potential to occur	N/CSCS	(Nesting) Open grassland and agricultural areas throughout Central California.
8	Little Willow Flycatcher (*Empidonax trailii brewsteri*); low potential to occur.	N/SE	Breeding and foraging habitat for the species includes lowland riparian woodlands dominated by willows, primarily in tree form or in the form of contiguous thickets, and cottonwoods
9	Bald Eagle (*Haliaeetus leucocephalus*); moderate potential to occur	Delisted/E,FP	(Nesting and Wintering) Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests are within 1 mile of water.
10	Golden Eagle (*Aquila chrysaetos*); moderate potential to occur		Found in rolling foothill and montane habitats, including sage-juniper flats, deserts, and oak woodlands. Cliffwalled canyons provide nesting habitats in most of its range; also nests in large, often isolated trees.
11	Yellow Breasted Chat (*Icteria virens*); low potential to occur.	N/CSCS	(Breeding) Dense, brushy thickets near water and in the thick understory of riparian woodlands. Forage patterns usually involve gleaning insects, spiders, and berries from the foliage of shrubs and low trees. Nests are often low to the ground in dense shrubs along streams.

No.	Species / Occurrence	Regulatory Status* (Federal/State)	Habitat
12	Bryant's Savannah Sparrow (*Passerculus sandwichensis alaudinus*); high potential to occur	None/SSC	Breed and winter in low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands. Commonly uses salt marshes for breeding and foraging in much of its range, but not in Humboldt Bay region (Hunter et al.
13	Black Capped Chickadee (*Poecile atricapillus*); high potential to occur	None/CSCS	Around Humboldt Bay, it breeds in extensive dairy pastures, especially in the taller grasses and rushes along roads and fences, and water conveyance canals.
14	Western Yellow Billed Cuckoo (*Coccyzus americanus occidentalis*); low potential to occur.	FT/SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.
15	Yellow Rail (*Coturnicops noveboracensis*); low potential to occur.	None/CSCS	Winter in coastal and bay marshes from Humboldt County
16	Osprey (*Pandion haliaetus*); high potential to occur	None/WL	Ocean shore, bays, freshwater lakes, and larger streams.
17	Bank Swallow (*Riparia riparia*); moderate potential to occur	N/ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting holes. Requires vertical banks/cliffs with fine- textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.
18	Purple martin (*Progne subis*); low potential to occur.	None/CSCS	Occurs locally in riparian habitat from coast into mountainous areas inland.
19	Short-eared Owl (*Asio flammeus*); high potential to occur	None/SSC	Found in swamp/marsh lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation. (Source Russ Creek EIR)
20	American Peregrine Falcon (*Falco peregrinus anatum*); moderate potential to occur		Lower montane coniferous forest, typically old growth. Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water.
Amphibians			
21	Southern Torrent Salamander (*Rhyacotriton variegatus*); low potential to occur.	None/CSCS	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.

No.	Species / Occurrence	Regulatory Status* (Federal/State)	Habitat
22	Foothill Yellow-Legged Frog (*Rana boylii*); low potential to occur.	N/ST	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.
23	Northern Red-Legged Frog (*Rana aurora*); high potential to occur	None/CSCS	Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during nonbreeding season.
Insects			
24	Western Bumble Bee (*Bombus occidentalis*); low potential to occur.	N/SCL	Various environments; meadows, gardens, and fields
Mammals			
25	Pallid Bat (*Antrozous pallidus*); moderate potential to occur	N/CSCS	Most common in open, dry habitats with rocky areas for roosting. Roost in rock crevices, trees, buildings, and bridges in arid regions.
26	Townsend's Big--Eared Bat (*Corynorhinus townsendii*); moderate potential to occur	N/CSCS	Most abundant in moist habitats. Roosts primarily in mines and caves, but also in buildings and other human structures.
27	Hoary bat (*Lasiurus cinereus*); moderate potential to occur	N/CSCS	May be found in any location in CA. Roosts in trees
28	Yuma myotis (*Myotis yumanensis*); low potential to occur.	N/CSCS	Found in open forests and woodlands usually feeding over water. Forms large maternity colonies of several thousand in buildings, caves and bridge structures.
29	Fisher (*Pekania pennanti*); low potential to occur.	N/CSCS	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.
Reptiles			
30	Western Pond Turtle (*Emys marmorata*); low potential to occur.	N/CSCS	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.
Anadromous Fish			
31	Green sturgeon (*Acipenser medirostris*); low potential to occur.	FT/CSCS	Estuarine; mainly in river mouths and coastal waters
32	White Sturgeon (*Acipenser transmontanus*); low potential to occur.	CSCS	Freshwater; inhabits large rivers and lakes
33	Steelhead (*Oncorhynchus mykiss*); high potential to occur	FT/CSCS	Freshwater; migratory, found in rivers and tributaries
34	Chinook salmon (*Oncorhynchus tshawytscha*); high potential to occur	FT/CSCS	Freshwater; migratory, found in rivers and tributaries

No.	Species / Occurrence	Regulatory Status* (Federal/State)	Habitat
35	Coho salmon (*Oncorhynchus kisutch*); high potential to occur	FE/SE	Freshwater; found in rivers, streams, and tributaries
36	Eulachon (*Thaleichthys pacificus*); low potential to occur.	FT/ST	Freshwater; inhabits rivers and coastal regions
37	Pacific lamprey (*Lampetra tridentata*); high potential to occur	CSCS	Freshwater; found in rivers, streams, and tributaries
38	Coastal cutthroat trout (*Oncorhynchus clarkii clarkii*); high potential to occur	CSCS	Freshwater; found in rivers, streams, and lakes
39	Western brook lamprey (*Lampetra richardsoni*); low potential to occur	CSCS	Freshwater; inhabits clear, silt-free streams
40	Longfin smelt (*Spirinchus thaleichthys*); moderate potential to occur	FT/CSCS	Estuarine; prefers brackish water near river mouths but can occur in completely fresh water.
Estuarine / Brackish Water Marine			
41	Tidewater goby (*Eucyclogobius newberryi*); low potential to occur	FT/CSCS	Estuarine; found in brackish water habitats like lagoons

*Regulatory status abbreviations are as follows:

FT/FE (Federally Threatened/Endangered) = ESA status

ST/SE (State Threatened/Endangered) = CESA status

CSCS (California Special Concern Species) = CDFW status

WL (Watch List)

N (None)

SCL (State Candidate for Listing)

REGULATORY FRAMEWORK

A combination of federal, state, regional, and local agencies have regulatory authority over proposed actions that may affect biological resources. A brief summary of relevant statutes, laws, regulations, policies, and measures applicable to the biological resources potentially affected by the Project follows.

FEDERAL

National Wild and Scenic Rivers Act (16 U.S.C. §§ 1271–1287)

This Act, established in 1968, focuses on the preservation of certain rivers with outstanding natural, cultural, and recreational values. The law prevents federal agencies from supporting projects, such as dams and water diversion, which would harm the rivers' free-flowing condition or their unique characteristics. It also encourages states to consider these rivers in their natural resource planning.

Federal Clean Water Act (33 U.S.C. §§ 1251–1387)

Initiated in 1972, this law sets forth comprehensive regulations to control the discharge of pollutants into U.S. waters. It empowers the EPA to set wastewater standards for industries and water quality standards for all contaminants in surface waters. The law also requires states to establish specific implementation plans to maintain existing water quality and to issue permits for discharges into navigable waters.

Federal Antidegradation Policy
This policy is a component of the Federal Clean Water Act and aims to maintain existing high-quality waters by requiring states to adopt antidegradation provisions in their water quality standards. These provisions must be designed to prevent any degradation of waters that are cleaner than the established federal minimums.

Federal Endangered Species Act (16 U.S.C. §§ 1531–1544)
Enacted in 1973, this Act serves to protect and recover imperiled species and the ecosystems they depend on. The law forbids the "taking" of listed species, meaning activities that harass, harm, or kill them. It also requires federal agencies to ensure that their actions do not jeopardize listed species or destroy their critical habitats.

Migratory Bird Treaty Act (16 U.S.C. §§ 703–712)
This 1918 Act implements multiple international treaties committed to the protection of migratory birds. The law prohibits the unauthorized killing, capturing, or selling of such birds and extends protection to their nests and eggs.

National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. §§ 4321–4347)
NEPA requires federal agencies to evaluate the environmental impacts of proposed actions. It calls for public input and the preparation of Environmental Impact Statements or Environmental Assessments for significant federal actions affecting the environment.

Federal Land Policy and Management Act of 1976 (16 U.S.C. §§ 460l–22)
This Act manages how the Bureau of Land Management administers public lands, emphasizing multiple-use management and sustained yield. It provides guidelines for land use planning and the scientific management of resources.

Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§ 1801–1884)
Enacted in 1976 and subsequently amended, this pivotal legislation provides the framework for fisheries management in the United States. The Act aims to conserve and manage fishery resources by implementing sustainable practices and minimizing bycatch. The National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration (NOAA), is responsible for overseeing its implementation.

Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d)
This federal law prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. The term "take" includes actions such as harassing, harming, pursuing, shooting, wounding, killing, trapping, capturing, or collecting. Violation of this act can result in civil and criminal penalties, including imprisonment. The law provides for some exceptions, such as certain Native American religious practices, and also allows for permits for scientific or educational purposes. This legislation is a critical tool in the conservation of these eagle species and is often considered in environmental impact assessments for projects that may interfere with eagle habitats.

Federally Protected Wetlands and Waters of the U.S.
Section 404 of the federal Clean Water Act (33 U.S.C 1344) and Section 10 of the Rivers and Harbors Act (33 USC 403) regulate actions affecting navigable and other special waters of the U.S., including wetlands. The Clean Water Act, as amended, designates the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) as the primary federal agencies with regulatory jurisdiction over impacts to wetlands and other waters of the United States.

STATE

California Endangered Species Act (CESA) (California Fish and Game Code §§ 2050-2115.5)

The CESA aims to protect threatened and endangered species in the state of California. It restricts the taking of listed species, mandates the preparation of recovery and management plans, and calls for inter-agency cooperation to preserve and protect the natural habitats of the species identified as endangered or threatened. The Department of Fish and Wildlife is the primary state agency responsible for implementing CESA.

Native Plant Protection Act (NPPA) (Cal. Fish & Game Code §§ 1900-1913)

Similar to the California Endangered Species Act (CESA), the NPPA is geared towards the conservation of native plants in California. The Act prohibits the taking of native plants listed as endangered or rare, except under specific conditions and typically with a permit. Like CESA, the NPPA also necessitates inter-agency cooperation, with the CDFW serving as the primary state agency for its implementation. The NPPA sets forth the framework for establishing conservation programs and management plans aimed at preserving the natural habitats of native plants recognized as endangered or rare. Both the NPPA and CESA are critical pieces of legislation that work in tandem to protect the biodiversity of California.

California Coastal Act of 1976 (Public Resources Code §§ 30000–30900)

This Act governs land use planning in California's coastal zone. It aims to protect natural resources and public access to the coast. The City of Ferndale is outside of the Coastal Zone. However, the Coastal Agricultural portion of the Planning Area is within the coastal zone. The California Coastal Commission and Humboldt County are responsible for planning and regulation in these areas.

California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000-21177)

CEQA requires state and local agencies to evaluate and disclose the environmental impacts of their discretionary actions and to mitigate those impacts to the extent feasible. CEQA reviews are often required for large-scale projects that could have significant environmental impacts.

State protected Wetlands and Waters of the State

The state of California maintains independent regulatory authority over impacts to wetlands and other waters of the state under Sections 401 and 402 of the federal Clean Water Act (33 USC 1341 and 1342 and 40 CFR 121 and 122) as amended, and the Porter-Cologne Water Quality Control Act (California Water Code 13000 *et seq*.). The state agency with primary regulatory responsibility for waters of the state is the State Water Resources Control Board (SWRCB) and its nine regional boards. The North Coast Regional Water Quality Control Board (NCRWQCB) maintains jurisdiction over all water resources in its regulatory scope, including isolated wetlands and waters in the region that includes the City of Ferndale Planning Area.

Porter-Cologne Water Quality Control Act (Water Code §§ 13000-14958)

This state law established the State Water Resources Control Board and nine Regional Boards, which are responsible for water quality control and planning. The law provides a comprehensive framework for the regulation of water quality in California.

California Water Code (Water Code §§ 100-7901)

This code outlines the state's laws regarding the use and allocation of California's water resources. The code sets forth the basic principles and guidelines for beneficial use, water rights, water quality, and water management.

REGIONAL AND LOCAL

Humboldt County Streamside Management Areas and Wetlands Ordinance: (314-61.1.7.6 to 61.1.18.1.8)
Established to provide minimum standards for the use and development of lands within Streamside Management Areas (SMAs), wetlands, and other wet areas, including natural ponds, springs, vernal pools, marshes, and wet meadows in the Planning Area outside City limits. This ordinance integrates the Streamside Management Areas and Wetlands standards into the zoning regulations of Humboldt County in accordance with state law mandates. It further seeks to enact elements of the County's General Plan policies related to open space, conservation, housing, water resources, biological resources, and public facilities. For SMAs, specific buffers are designated: one hundred (100) feet for perennial streams and fifty (50) feet for intermittent streams. Wetlands have separate buffers: fifty (50) feet for seasonal and one hundred fifty (150) feet for perennial wetlands. Buffer zones commence from the respective edge of the delineated wetland or stream. Adjustments to buffers are permissible based on environmental conditions and consultations with the California Department of Fish and Wildlife, with specific exemptions for certain manmade wetlands.

City of Ferndale Russ Park (Ordinance 07-02)
This ordinance, known as the "Russ Park Ordinance", establishes guidelines for the use of Russ Park situated within Ferndale's City limits. Recognized as a natural area and bird sanctuary, the ordinance emphasizes safeguarding its biological resources. Protective measures include restrictions against damaging flora, prohibiting waste dumping, limiting access to wetland areas, and guidelines for pet interactions to prevent ecological disturbances. Motorized vehicles are generally barred, with certain exceptions for maintenance tasks. Additionally, any organized group activities within the park that could potentially impact its environmental balance require prior City approval. Overall, the ordinance underscores the City's commitment to preserving the park's ecological integrity while accommodating public access.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

This analysis uses the significance thresholds from the CEQA Guidelines Appendix G. The proposed Land Use and Safety Elements of the City of Ferndale General Plan would result in a significant impact on biological resources if they would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The analysis of potential biological resources impacts is programmatic rather than project-specific because the type of development being evaluated is potential development that may or may not occur in the future. Also, the current General Plan Housing Element analysis indicates that the City has a supply of land which can accommodate more new housing units than the anticipated high-growth scenario demand of 85 new homes between 2023 – 2045. Given this, the evaluation of biological resource impacts in this EIR focuses on changes in the type of new development allowed by the proposed Land Use and Safety Element updates.

The evaluation of potential impacts to biological resources is based on mapped vegetation communities and wetlands (see Figure 4.5-1), and database inventory of special status plants and animals (see Tables 4.5-1 and 4.5-9). It should be noted that the data shown on these figures and table are from a publicly accessible database and are displayed at a coarse scale and were not mapped or compiled specifically as a component of the Land Use Element update or this Draft EIR.

PROJECT IMPACTS AND MITIGATION

Impact BIO-01: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact BIO-02: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Finding BIO-01 & BIO-02: Development anticipated under the Land Use Element Update could potentially impact special status species and/or riparian habitat. Proposed Mitigation Measure BIO-1 will reduce potential impacts to less than significant.

Impacts to sensitive species and habitats may occur directly or indirectly through alteration of the natural habitat when undeveloped land is converted from open space to developed uses. Changes in the habitat and quantity of plant and animal species on a property could occur during development due to grading, removal of vegetation, and the encroachment into open space areas. In addition, new development can also impact sensitive species and habitats through the effects of noise and light.

The development of currently undeveloped land, especially outside of infill areas, would likely be the primary cause of potential adverse impacts to special status species and riparian habitats. The General Plan tools for the protection of such resources are the Land Use Map and biological resource protection policies. The Land Use Map identifies land appropriate for residential, commercial, and other uses within the City. The Land Use Element Update includes goals and policies which are protective of land planned for open space and resource production and encourage new development to infill areas. Policies and implementation programs in the Land Use Element address biological resources and are intended to protect sensitive biological communities.

Direct Impacts

Excavation, grading, road construction, and/or other similar earthwork related to such projects could result in impacts to special status plant and/or wildlife species. Riparian habitats within the proposed land use change areas could also provide important breeding, foraging, roosting, denning, refuge, developmental, migratory, and dispersal habitats for non-aquatic special status organisms. Projects that involve development in or near Francis Creek could result in impacts to special status aquatic organisms as well as other stream-dependent or associated special status organisms.

Indirect and/or Cumulative Impacts

Development associated with the implementation of the Project could also lead to indirect and/or cumulatively considerable significant adverse effects on special status and/or otherwise protected fish, wildlife, and/or botanical taxa. In addition to the direct conversion of native vegetation and/or other types of habitats that support such protected organisms, other such potential adverse effects would primarily be attributable to substantial modifications of vegetation, hydrologic, microclimatic, and/or other environmental conditions that could, individually or in aggregate, reduce and/or degrade habitats within the City. Depending upon the various combinations of habitat types and organisms of interest, various potential development-related factors could lead to reductions in habitat suitability. Some examples include the displacement of native vegetation resulting from the introduction and spread of invasive vegetation; the introduction and spread of non-native, competitive, predatory, and/or invasive wildlife species; and reductions in plant pollinators or wildlife food resource availability.

Increased impervious surface area could also increase both the volume and velocity of unbuffered stormwater discharges to stream systems within the Planning Area, potentially resulting in increased erosion, channel incision, lowering of the adjacent water table, and the scouring of suitable in-channel spawning and breeding substrates along with associated dependent aquatic organism life history stages (e.g., eggs, larvae, immature individuals, etc.). Increased development could also lead to increases in the abundance, transport, and delivery of fine sediments and other urban contaminants into streams, degrading aquatic habitat suitability and water quality, and increasing the exposure of special status aquatic organisms to urban contaminants.

Potential future development consistent with the Project could also adversely affect stream-dependent or associated special status organisms as a result of the removal or degradation of native riparian vegetation. Potential development-related impacts to native riparian vegetation associated with streams and wetlands within the proposed land use change areas could also potentially affect special status birds, bats, insects, plants, and other botanical species; as well as non-special status, but otherwise protected, raptors and other nesting and/or migratory birds. In addition to providing beneficial ecosystem services (e.g., flood-protection, stream bank stabilization, shading and microclimate buffering, biodegradation of urban pollutants, etc.) to local property owners and other members of the community, riparian plant communities within the City also provide important breeding, foraging, roosting, denning, refuge, developmental, migratory, and dispersal habitats for special status organisms.

ANALYSIS OF CHANGES TO THE LAND USE MAP, PROPOSED POLICIES, AND IMPLEMENTATION MEASURES

The proposed changes to the Land Use Map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Most of the proposed land use designation changes apply to areas that are already designated for residential and/or other uses and would allow development under the existing general plan policies. Therefore, the proposed Land Use Element would be more protective of biological resources than current policies. The proposed density

increases for land already designated for residential uses or other development is not expected to substantially increase potential impacts to biological resources because the overall level of development on a site would be similar. The following proposed Land Use Element policies address potential impacts to sensitive species and riparian habitats:

Policy LU-1.4 – Residential Infill encourages the infilling and completion of residential neighborhoods to take full advantage of available public services. Placing new development within areas already developed with existing buildings will minimize the conversion of open space to developed uses thereby reducing the impact of new development on sensitive species and riparian habitat.

Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.

Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.

Policy LU2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.

Policy LU-3.1 – Conservation, requires existing open space and agricultural land at the edges of and surrounding the City to be preserved to protect natural resources.

Policy LU-4.3 – Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.

Policy LU-3.4 – Francis Creek Corridor continues the existing General Plan protections for the Francis Creek riparian corridor, “The Francis Creek riparian corridor shall be maintained or improved to permit natural flow where possible, prevent flooding in developed areas, and maintain natural habitat uses where appropriate.”

Policy LU-4.2 – Enhances existing policy protecting the riparian habitat along Francis Creek:

Francis Creek Riparian Habitat and Erosion Control: A streamside protection area shall be established along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. Buffers from the top of bank or the edge of the riparian dripline, whichever is greater, on either side of the stream, shall be established. Development within streamside protection areas shall only be permitted under limited circumstances where mitigation measures have been provided to minimize potential environmental effects including:

> Road, bridge, and trail replacement or construction may be permitted that would not degrade fish and wildlife resources or water quality, and where vegetative clearing is kept to a minimum.
>
> Fencing along property boundaries and along buffer boundaries to prevent bank erosion and degradation of natural riparian vegetation.
>
> Maintenance of existing roads, driveways, utility lines, and structures.
>
> Agricultural operations compatible with maintenance of riparian resources.

The removal of vegetation for disease control, flood control, or public safety purposes may be approved, in consultation with CDFW.

In areas where existing development is adjacent to the creek, buffers may be reduced where the City determines, in consultation with CDFW, that the reduction will not significantly affect the biological resources of the creek or stream within the property.

When the prescribed buffer prohibits development of the site for the primary use for which it is designated, measures shall be applied that allow development and result in the least environmentally damaging feasible project.

Implementation Measure LU-IP2 – Zoning Code Updates, continues the existing implementation framework to consider establishing a Francis Creek corridor streamside protection zone in the Zoning Ordinance. A timeframe of two years is specified for this implementation measure.

Policy LU-3.5 – Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.

Policy LU-4.1 – Russ Park Stewardship, requires the City to manage Russ Park for trails, habitat biodiversity, and stable soils in collaboration with local, regional, and state agencies.

The only policy or implementation measure in the Safety Element that could potentially affect biological resources is Safety Element Program 2.j which directs the City to perform preventative maintenance to maintain flow capacity of Francis Creek. However, this is part of an ongoing program that involves City consultation with CDFW.

CONCLUSION FOR IMPACT BIO-01 AND BIO-02

The proposed General Plan Land Use Element update emphasizes infill development and discourages the encroachment of urban uses into undeveloped areas. At the same time, existing parcelization of outlying areas and the potential creation of new parcels with residential or other development at buildout could result in adverse effects on the City's sensitive species and sensitive habitats. However, these impacts are not anticipated to be substantially greater than what could occur under the currently adopted Land Use Element. Land Use Element proposed goals, policies, and implementation programs encourage the protection of habitats within the City that support special status and/or otherwise protected species as discussed above. This includes proposed Policy LU-4.2 - Francis Creek Riparian Habitat Enhancement and Erosion Control that improves upon the existing General Plan biological resource protections by establishing a streamside protection area along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. No-disturbance buffers protect sensitive habitats and reduce potential land use impacts to adjacent areas.

In addition, existing federal and state laws that govern sensitive species and habitats (e.g., the Federal Endangered Species Act and the California Endangered Species Act) would apply to development under the General Plan. Existing regulations and policies would likely reduce some of the potential impacts identified herein to special status fish, wildlife, and/or botanical taxa, riparian habitats, and other sensitive communities. All development allowed by the Project would be subject to state and federal biological resource regulations and their associated respective permitting processes (see Regulatory Setting, previously herein), and would involve consultation with relevant regulatory agencies (e.g. CDFW, USFWS, NMFS, NCRWQCB, etc.) as appropriate. Activities requiring

discretionary approvals by the City, state, and federal agencies provide for additional protection of biological resources. These include development applications which are reviewed under CEQA and NEPA when applicable.

Additional clarification is proposed for Land Use Element Policies LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats, and sensitive natural communities. Mitigation Measure BIO-1 below addresses the inconsistencies between the proposed policies and implementation programs by establishing a Francis Creek Stream Protection Area (SPA) and clarifying that SPA standards would be incorporated into the Zoning Code update (LU-IP2). The proposed revisions to LU-3.2 encourage the use of native species in landscaping and avoidance of invasive species. With proposed clarifications and revisions to Land Use Element and Safety Element policies and implementation measures and continued implementation of existing federal and state regulations, impacts to species identified as candidate, sensitive, or special status species, riparian, and other sensitive habitats would be less than significant with mitigation.

MITIGATION MEASURE

Mitigation Measure BIO-1: **Revised Policies and Implementation Programs.** Revise the biological resource protections for sensitive species and riparian habitat in Policy LU-3.2, LU-4.2, LU-IP2, LU-IP6 and Safety Element Program 2j for consistency and clarity and to minimize potential environmental impacts of new development on sensitive species, riparian habitats and sensitive natural communities. The adopted Land Use and Safety Elements shall include the suggested revisions below.

> **Revised Policy LU-3.2 Improve Drainage and Landscaping:** Incorporate drainage improvements and low impact development (LID) features in all areas of the City to increase onsite retention, protect water quality and associated aquatic habitats, and reduce flooding. Landscaping and vegetated LID features should avoid the use of noxious weeds or other invasive plants identified by the California Invasive Plant Council (Cal-IPC) and prioritize use of locally-appropriate native vegetation.
>
> **Revised Policy LU-4.2 – Francis Creek Riparian Habitat and Erosion Control:** A streamside protection area (SPA) shall be established along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. ~~Buffers~~ The SPA shall extend from the top of bank or the edge of the riparian dripline, whichever is a greater distance from the creek centerline, for 50 feet on either side of the creek ~~stream, shall be established~~. Development within ~~streamside protection areas~~ the SPA shall only be permitted under limited circumstances where mitigation measures have been provided to minimize potential environmental effects ~~including~~ as follows:
>
> > Road, bridge, and trail replacement or construction may be permitted that would not degrade fish and wildlife resources or water quality, and where vegetative clearing is kept to a minimum.
> >
> > Fencing along property boundaries and along ~~buffer boundaries~~ the SPA boundary to prevent bank erosion and degradation of natural riparian vegetation.
> >
> > Maintenance of existing roads, driveways, utility lines, and structures.
> >
> > Agricultural operations compatible with maintenance of riparian resources.
> >
> > The removal of vegetation for disease control, flood control, or public safety purposes ~~may be approved,~~ in consultation with CDFW.

~~In areas where existing development is adjacent to the creek, buffers~~ With a Conditional Use Permit, the SPA may be reduced or eliminated where the City determines, in consultation with CDFW, that the reduction will not significantly affect the riparian habitat or biological resources of the creek ~~or stream within the property~~.

When the prescribed SPA ~~buffer~~ prohibits development of the site for the primary use for which it is designated, measures shall be applied that allow development and result in the least environmentally damaging feasible project.

In Areas adjacent to Francis Creek should avoid the use of noxious weeds or other invasive plants identified by the California Invasive Plant Council (Cal-IPC) and prioritize use of locally-appropriate native vegetation, and encourage the removal of existing invasive non-native plants.

Revised Implementation Program LU-IP2: Zoning Code Updates: Update the zoning code as necessary for land use designation, density, intensity, and lot size consistency and to add a combining zone describing the requirements of the Francis Creek Stream Protection Area (SPA). Consider adding affordable housing provisions ~~and a Francis Creek corridor streamside protection zone~~.

Department: Planning When: Within two years

(Delete) ~~**Implementation Program LU-IP6: Stream Set Back Standards:** Establish a 50 foot stream set back requirement for new development along designated waterways within the City including Francis Creek. The set back may be reduced if specific evidence is provided showing there will be no impact to the waterway.~~

~~Department: Planning/Engineering When: Within 2 years~~

Revised Safety Element Implementation Program 2j: In consultation with CDFW, perform preventative maintenance to maintain flow capacity of Francis Creek.

SIGNIFICANCE AFTER MITIGATION

With Mitigation Measure BIO-1, Biological Resource Impacts BIO-01 and BIO-02 would be reduced to less than significant.

Impact BIO-03: Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Finding BIO-03: Development facilitated by the Land Use Element Update could involve direct or indirect impacts to wetlands during construction and/or operation. Implementation of federal, state, and local regulations and policies, as well as Mitigation Measures BIO-1 and BIO-2 would ensure potential wetland impacts would be less than significant.

Wetlands are protected under the federal Clean Water Act and state Porter-Cologne Act. The Clean Water Act regulates jurisdictional aquatic resources considered “Waters of the U.S.”, and the Porter Cologne Act regulates jurisdictional aquatic resourced considered “Waters of the State.” These definitions have the potential to change

over time, by federal and state administration, and by case law. Typically, Waters of the State is a broader definition than Waters of the U.S. All projects that dredge, fill, or modify a wetland or other aquatic resource considered a Water of the U.S. and/or Water of the State would be required to obtain permits and likely to perform mitigation to offset impacts to the aquatic resources impacted under the project.

ANALYSIS OF CHANGES TO THE LAND USE MAP, PROPOSED POLICIES AND IMPLEMENTATION MEASURES

Land uses and development consistent with the Land Use and Safety Element Update could result in the direct loss of or modification to existing wetlands. However, these impacts are not anticipated to be substantially greater than what is expected under the existing General Plan. Affected wetlands could include both the wetland-related sensitive natural community types described in the setting section above, as well as areas of open water, degraded and modified streams and channels, unvegetated waters, and isolated seasonal wetlands now dominated by non-native species. Impacts to wetlands associated with the Francis Creek stream channel are similar to the impacts on riparian habitat along Francis Creek described above in response to Impact BIO-01 & BIO-02.

Potential direct and indirect effects from development adjacent to wetlands include, but are not limited to: altered hydrology; diminished water quality from the discharge of pollutants such as sediment, pesticides, petroleum products, pathogens and other toxic substances; vegetation removal; disturbance to wildlife from noise, night lighting, and domestic animals; introduced invasive plant and animal species; altered microclimate; and human intrusion such as off-road vehicle use, trash dumping, and filling.

Implementation of the updated Land Use and Safety Elements could result in additional development that may impact wetlands. Future development consistent with the general plan could result in removal, filling, hydrological interruption, or other impacts to wetlands depending on the manner in which future development is implemented. Alteration of wetlands could occur when undeveloped land is converted to residential, commercial, industrial, or other uses. Changes to wetlands could occur during development due to development of structures, roadways, and other infrastructure improvements.

Existing regulations and policies would likely reduce some potential impacts to wetlands, Waters of the State, and/or Waters of the U.S. identified above. All development facilitated by the Project would be subject to existing state and federal aquatic resource regulations (see Regulatory Setting, previously herein) and their associated respective permitting processes, and would require consultation with the U.S. Army Corps of Engineers (USACE), the North Coast Regional Water Quality Control Board (NCRWQCB), and/or California Department of Fish and Wildlife (CDFW).

The Land Use Map identifies land designated for residential, commercial, and other uses within the City. The Land Use and Safety Element Update includes goals and policies which are protective of land planned for open space and resource production and encourage new development to infill areas. The proposed changes to the Land Use Map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. The following policies of the Land Use Element address potential impacts to wetlands:

Policy LU-1.4 – Residential Infill encourages the infilling and completion of residential neighborhoods to take full advantage of available public services. Placing new development within areas already developed with existing buildings will minimize the conversion of open space to developed uses thereby reducing the impact of new development on wetlands.

Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.

Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.

Policy LU-2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.

Policy LU-3.1 – Conservation, requires existing open space and agricultural land at the edges of and surrounding the City to be preserved to protect natural resources.

Policy LU-4.3 – Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.

Policy LU-3.4 – Francis Creek Corridor continues the existing General Plan protections for the Francis Creek, "The Francis Creek riparian corridor shall be maintained or improved to permit natural flow where possible, prevent flooding in developed areas, and maintain natural habitat uses where appropriate."

Policy LU-4.2 – Enhances existing Plan policy protecting the Francis Creek riparian habitat:

> "Francis Creek Riparian Habitat Enhancement and Erosion Control: A streamside protection area shall be established along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. Buffers from the top of bank or the edge of the riparian dripline, whichever is greater, on either side of the stream, shall be established. Development within streamside protection areas shall only be permitted under limited circumstances where mitigation measures have been provided to minimize potential environmental effects including:
>
> > Road, bridge, and trail replacement or construction may be permitted that would not degrade fish and wildlife resources or water quality, and where vegetative clearing is kept to a minimum.
> >
> > Fencing along property boundaries and along buffer boundaries to prevent bank erosion and degradation of natural riparian vegetation.
> >
> > Maintenance of existing roads, driveways, utility lines, and structures.
> >
> > Agricultural operations compatible with maintenance of riparian resources.
> >
> > The removal of vegetation for disease control, flood control, or public safety purposes may be approved, in consultation with CDFW.
> >
> > In areas where existing development is adjacent to the creek, buffers may be reduced where the City determines, in consultation with CDFW, that the reduction will not significantly affect the biological resources of the creek or stream within the property.
> >
> > When the prescribed buffer prohibits development of the site for the primary use for which it is designated, measures shall be applied that allow development and result in the least environmentally damaging feasible project."

Implementation Measure LU-IP2 – Zoning Code Updates, continues the existing implementation framework to consider establishing a Francis Creek corridor streamside protection zone in the Zoning Ordinance. A timeframe of two years is specified for this implementation measure.

Policy LU-3.5 – Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.

Policy LU-4.1 – Russ Park Stewardship, requires the City to manage Russ Park for trails, habitat biodiversity, and stable soils in collaboration with local, regional, and state agencies.

The only policy or implementation measure in the Safety Element that could affect wetlands is Safety Element Program 2.j which directs the City to perform preventative maintenance to maintain flow capacity of Francis Creek.

CONCLUSION FOR IMPACT BIO-03

The General Plan Land Use Element emphasizes infill development and discourages the encroachment of urban uses into undeveloped areas. At the same time, existing parcelization of outlying areas and the potential creation of new parcels with residential or other development at buildout could result in wetland impacts. However, these impacts are not anticipated to be substantially greater than what could occur under the currently adopted Land Use Element. Land Use Element proposed goals, policies, and implementation programs encourage the protection of habitats within the City that support special status and/or otherwise protected species as shown in the discussion above. This includes proposed Policy 4.2 - Francis Creek Riparian Habitat Enhancement and Erosion Control that improves upon the existing General Plan biological resource protections by establishing a streamside protection area along both sides of Francis Creek to protect stream ecosystems and the associated riparian habitat areas. Proposed Policy LU-3.8 requires identification of wetlands and appropriate buffer areas on site plans.

In addition, existing federal and state laws that govern wetlands would apply to development under the General Plan. Existing regulations and policies would likely reduce some of the potential impacts identified herein to wetlands. All projects that dredge, fill, or modify a wetland or other aquatic resource considered a Water of the U.S. and/or Water of the State would be required to obtain permits and likely to perform mitigation to offset impacts to the aquatic resources impacted under the project. All development allowed by the Project would be subject to state and federal regulations and their associated respective permitting processes (see Regulatory Setting, previously herein), and would involve consultation with relevant regulatory agencies (e.g. US Army Corps of Engineers, NCRWQCB, CDFW, etc.) as appropriate. Activities requiring discretionary approvals by the City, state, and federal agencies provide for additional protection of wetlands. With continued implementation of existing federal and state regulations and proposed new policies and implementation measures of the General Plan, impacts to wetlands would be less than significant with mitigation.

MITIGATION MEASURES

Mitigation Measure BIO-01 described above addresses potential impacts to the wetlands associated with Francis Creek and resolves inconsistencies between proposed policies and implementation programs.

Mitigation Measure BIO-2: New Policy – Wetland Delineation Requirement

> **LU-3.8 – Wetland Delineation Requirement:** Any application for new development involving ground disturbance on a parcel where wetlands may be present according to the National Wetland Inventory or

other site-specific evidence shall include a wetland reconnaissance and delineation report prepared by a qualified professional. The site plan shall show all proposed new development is located outside of any wetlands that exist on the subject property and appropriate wetland buffers based upon analyses and recommendations in the site-specific study. New development proposed within wetlands or wetland buffer areas shall require consultation and required regulatory approvals from the U.S. Army Corps of Engineers (USACE), the North Coast Regional Water Quality Control Board (NCRWQCB), and/or California Department of Fish and Wildlife (CDFW).

SIGNIFICANCE AFTER MITIGATION

With Mitigation Measures BIO-1 and BIO-2, Biological Resource Impact BIO-03 is reduced to less than significant.

Impact BIO-04: Will the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Finding BIO-04: Development facilitated by the Land Use and Safety Element Updates would avoid impacts to wildlife movement corridors by conserving natural areas, as directed by proposed policies and would minimize impacts to wildlife movement through implementation of Mitigation Measures BIO-1 and BIO-2. Impacts would be less than significant with mitigation.

Much of the City is developed and urbanized; however riparian corridors and other undeveloped areas may provide corridors for wildlife movement, including migratory birds and fish. The conversion of existing undeveloped natural habitats to developed landscapes with associated road systems, fencing, and other such infrastructure could fragment and reduce the extent of native habitats that currently provide for wildlife movement, migration, and dispersal. Francis Creek serves as an important movement corridor for terrestrial and aquatic wildlife in the City. The Land Use Element contains proposed policies that would reduce potential impacts to wildlife movement by encouraging infill near developed areas. As detailed in the impact analysis for Impacts BIO-01, -02, and -03, proposed policies LU-2.7, 3.2, 3.4, and 4.2 address development in or near wildlife corridors, including riparian habitat and other sensitive natural communities. The proposed Land Use designation change for Russ Park from PF – Public Facilities to NR – Natural Resources will continue to ensure natural resource conservation of the site and will also protect any wildlife corridors that may exist on the property.

In addition, existing regulations and policies would likely reduce some potential effects on the movement or migration of native wildlife. All development allowed by the Project would be subject to existing state and federal natural resource regulations (see Regulatory Setting, previously herein) and their associated respective permitting processes, including CDFW's Lake and Streambed Alteration Program, and would require consultation with CDFW and other relevant regulatory agencies (e.g., USFWS, NMFS, USACE, NCRWQCB, etc.) as appropriate.

Proposed Land Use Element policies promote infill development and are designed to encourage new development in areas that are adjacent to existing utilities and services and protect natural features and the Francis Creek corridor. Therefore, with implementation of Mitigation Measures BIO-1 & BIO-2 the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species. No impacts to wildlife

nursery sites are expected because no wildlife nursery sites have been identified within the City. With implementation of Mitigation Measures BIO-01 & BIO-2, potential impacts would be less than significant.

MITIGATION MEASURES

Mitigation Measure BIO-1 (see Impact BIO-01 & BIO-02) and BIO-2 (see Impact BIO-03).

Impact BIO-05: Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-06: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Finding BIO-05 & BIO-06: The Land Use and Safety Element Updates propose new policies that protect biological resources and would not conflict with existing policies or ordinances protecting biological resources. The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. This impact is considered less than significant.

The proposed Project is an update to the City of Ferndale's Land Use and Safety Elements, including the land use map and policies. Proposed General Plan policies and implementation programs are generally more protective of biological resources than current local policies and ordinances. Under the earlier discussion of Impacts BIO-01 and BIO-02 the current biological resource protection measures of the General Plan are compared to the proposed new policies and implementation measures and concludes that the proposed new policies will improve protections for biological resources in the City.

The Land Use and Safety Element Updates contains policies and implementation programs that maintain and enhance protections for streams and other sensitive areas. The revisions proposed are intended to improve the efficacy of the current General Plan in protecting these biological resources.

Implementation of the proposed Project would be consistent with, or improve upon, local policies and ordinances protecting biological resources and would therefore not conflict with local policies or ordinances protecting biological resources. There are no adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans within the Planning Area. Therefore, implementation of the proposed Project would not conflict with any known conservation plans. Impacts of revisions to local policies or ordinances protecting biological resources would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Batzer, D. P., & Sharitz, R. R. (Eds.). (2006). *Ecology of freshwater and estuarine wetlands.* University of California Press.

Becker, G. a. (2009). *Steelhead/Rainbow Trout (Oncorhynchus mykiss) resources of the Eel River Watershed, California .* Oakland: Center for Ecosystem Management and Restoration (CEMAR). Retrieved from http://www.cemar.org/eel/01_Lower_eel_final.pdf

Benton, T. G., Vickery, J. A., & Wilson, J. D. (2003). Farmland biodiversity: Is habitat heterogeneity the key? *Trends in Ecology & Evolution, 18*(4), 182-188.

Busby, Peggy J., et al. (1996). *Status review of west coast steelhead from Washington, Idaho, Oregon, and California.* Retrieved from https://repository.library.noaa.gov/view/noaa/2986

California Department of Fish & Wildlife. (2003). *Stream Inventory Report: Francis Creek.* California Department of Fish & Wildlife. Retrieved from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=89530

California Department of Fish & Wildlife. (2023). *American Peregrine Falcons in California*. Retrieved from California Department of Fish & Wildlife: https://wildlife.ca.gov/Conservation/Birds/Peregrine-Falcon#:~:text=Due%20to%20diligent%20conservation%20and,delisted%20in%20California%20in%202009.

California Department of Fish and Wildlife. (2023). *Golden Eagles in California*. Retrieved from California Department of Fish and Wildlife: https://wildlife.ca.gov/Conservation/Birds/Golden-Eagles#:~:text=The%20golden%20eagle%20(Aquila%20chrysaetos,fully%20protected%20species%20in%20California.

California Natural Resources Agency. (2015). Bond Accountability . *Project: Salt River Ecosystem Restoration Project*. Retrieved from https://bondaccountability.resources.ca.gov/Project.aspx?ProjectPK=11353&PropositionPK=5

California State Water Resources Control Board. (2005). *Watershed Planning Chapter: Section 2.5 - Eel River Watershed Management Area.* Santa Rosa: North Coast Regional Water Quality Control Board . Retrieved from https://www.waterboards.ca.gov/northcoast/water_issues/programs/wpc/wpc.pdf

Caliofrnia Department of Fish & Wildlife. (2023). *Ferndale Land Use and Safety Element Updates (SCH# 2023020217).* Eureka. Retrieved from https://ceqanet.opr.ca.gov/2023020217/Attachment/MKh-n_

Castelle, A. J., C. Conolly, M. Emers, E. D. Metz, S. Meyer, M. Witter, S. Mauermann, T. Erickson, and S. S. Cooke. (1992). *Wetlands buffers use and effectiveness.* (W. D. Shorelands and Coastal Zone Management Program, Ed.) Olympia, Washington : Adolfson Associates, Inc. Retrieved from https://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Wetland_Buffers_Use_and_Effectiveness.pdf

City of Ferndale. (2022). *Drainage Master Plan Update Final.* Prepared by Ontiveros Associates Inc. & Planwest Partners, Inc.

City of Ferndale. (2023). *Ferndale General Plan Land Use Element Preliminary Public Review Draft.* Planwest Partners, Inc.

Conservation Biology Institute . (2023). *Data Basin*. Retrieved from Habitat Conservation Plan (HCP), California: https://databasin.org/maps/new/#datasets=c116dd0d32df408cb44ece185d98731c

Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). Classification of wetlands and deepwater habitats of the United States. *Palustrine System*. Washington, D.C.; Jamestown, ND: U.S. Department of the Interior, Fish and Wildlife Service; Northern Prairie Wildlife Research Center. Retrieved from https://web.archive.org/web/20141101091638/http://www.fws.gov/wetlands/Documents/classwet/palustri.htm

Cryan, P. M. (2003). Seasonal distribution of migratory tree bats (Lasiurus and Lasionycteris) in North America. *Journal of Mammalogy, 84*(2), 579–593.

Del Oro Water Company. (2010). *Initial statement of water diversion and use.* Sacramento: State Water Resources Control Board, Division of Water Rights.

Doran, J. a. (2000). Soil health and sustainability: Managing the biotic component of soil quality. *Applied Soil Ecology, 15*(1), 3-11.

Downie, Scott T., Lucey, Kevin. P. (2005). *Salt River Watershed Assessment. Coastal Watershed Planning and Assessment Program.* Department of Fish and Game. Retrieved from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=175825

Ferndale City Council. (2023). DRAFT Action Minutes for City Council Meeting of July 19, 2023. *City Council Meeting.* City of Ferndale. Retrieved from https://ci.ferndale.ca.us/wp/city-council-packets/230816-CouncilPacket.pdf

Friends of the Eel River. (2007, July 2007). *About the Eel River*. Retrieved from https://web.archive.org/web/20070719115600/http://www.eelriver.org/engine.php?bit=eelriver

Garwood, Justin. (2018). *Coastal Cutthroat Trout in California: Population Monitoring, Status, and Management.* Arcata: California Department of Fish and Wildlife, Anadromous Fisheries Resource and Monitoring Program. Retrieved from https://www.coastalcutthroattrout.org/wp-content/uploads/2019/05/Garwood.CCT_.California.2018Final.pdf

Garwood, R. S. (2017). Historic and contemporary distribution of Longfin Smelt (Spirinchus thaleichthys) along the California coast. *California Fish and Game Journal, 103*(3), 96-117. Retrieved from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=152476&inline

Healey, M. C. (1991). *Life History of Chinook Salmon .* (C. G. Margolis, Ed.) Vancouver , British Columbia , Canada: UBC Press. Retrieved from https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=990ea97858e0c45f0adc4d11bff0434a6155b8ee

Hobbs, R. J., & Huenneke, L. F. (1992). Disturbance, diversity, and invasion: Implications for conservation. *Conservation Biology*, 324-337.

Humboldt County. (2017). *Revised Draft EIR Chapter 3.11, Biological Resources.* Eureka: Humboldt County. Retrieved from https://humboldtgov.org/DocumentCenter/View/58840/Section-311-Biological-Resources-Revised-DEIR-PDF

Humboldt County. (2023, August). *Humboldt County*. Retrieved from Humboldt County WebGIS: https://webgis.co.humboldt.ca.us/HCEGIS2.0/

Humboldt County Groundwater Sustainability Agency. (2022). *Eel River Valley Groundwater Sustainability Plan.* Humboldt County Groundwater Sustainability Agency. Retrieved from https://humboldtgov.org/DocumentCenter/View/103631/ERVB-GSP-final-1-29-2022

Humboldt County Resource Conservation District. (n.d.). *Humboldt Resource Conservation District Programs*. Retrieved from Salt River Watershed: https://humboldtrcd.org/programs/salt-river-watershed/

Humboldt County Resource Conservation District. (2011). *Final Environmental Impact Report: Salt River Ecosystem Restoration Project (SCH# SD2007-05-6).* Prepared by: Grassetti Environmental Consulting; In association with: California State Coastal Conservancy, Kamman Hydrology & Engineering, Inc. Retrieved from http://humboldtrcd.org/wp-content/uploads/2021/11/SaltRiverFinalEIR.pdf

Humboldt County Resource Conservation District. (2023). *Russ Creek and Centerville Slough Restoration Project: Draft Environmental Impact Report.* Eureka: GHD Inc. Retrieved from http://humboldtrcd.org/wp-content/uploads/2023/05/RCCSRP-DEIR.pdf

Humboldt Local Agency Formation Commission. (2018). *City of Ferndale Municipal Service Review.* Arcata: Humboldt Local Agency Formation Commission.

Keeley, J. E., & Fotheringham, C. J. (2001). Historic fire regime in southern California shrublands. *Conservation Biology*, 1536-1548.

Mitsch, W. J., & Gosselink, J. G. (2007). *Wetlands.* John Wiley & Sons.

Naiman, R. J. (2005). *Riparia: Ecology, conservation, and management of streamside communities.* Elsevier.

Natural Resources Conservation Service. (2010). *Food Security Act Wetland Identification Procedures.* Retrieved from https://www.nrcs.usda.gov/sites/default/files/2022-10/FSAct_Procedures.pdf

Owen, Alyssa. (2023). *Salt River Restoration Monitoring Program.* Enter "Humboldt County Resource Conservation District. Retrieved from http://humboldtrcd.org/wp-content/uploads/2023/08/Salt-River-Fish-Monitoring-Summary-Report-2023.pdf

Pearl, C. A., M. J. Adams, N. Leuthold, and R. B. Bury. (2005). Amphibian Occurrence and Aquatic Invaders in a Changing Landscape: Implications for Wetland Mitigation in the Willamette Valley, Oregon, USA. *Wetlands, 25*(1), 76-88.

Pierson, E. D., Rainey, W. E., & Chow, L. (1999). The Townsend's Big-Eared Bat, Corynorhinus townsendii: A Technical Review. *Oregon Fauna Report Number 1*, 56-64.

Redwood News. (2017, November 4). *Local News*. Retrieved from https://kiem-tv.com/2017/11/04/salt-river-restoration-project-celebrates-success/

Region, C. R. (2014). *Determining Width of Waterbody Buffer Zones: Conditional Waiver of Waste Discharge Requirements for Timber Harvest and Vegetation Management Activities.* Retrieved from https://www.waterboards.ca.gov/rwqcb6/water_issues/programs/waste_discharge_requirements/timber_harvest/docs/timber_waiver/attb_wbbz14.pdf

Sandercock, F. K. (1991). *Pacific Salmon Life Histories.* (C. G. Margolis, Ed.) Vancouver, British Colombia , Canada: UBC Press. Retrieved from https://coastcoho.org/wp-content/uploads/2022/03/Life-History-of-Coho-Salmon.pdf

Shuford, W. D., & Gardali, T. (2008). *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California.* Camarillo: Studies of Western Birds 1. Western Field Ornithologists & California, and California Department of Fish and Game.

Timm, R. M. (1983). Synanthropic Mammals of North America. *Northwestern Naturalist, 64*(3), 138-144.

TransTerra Consulting LLC. . (2023). *Biological Resource Assessment Ferndale Citywide Sewer Replacement Project.* Arcata: TransTerra Consulting LLC. .

U.S. Army Corps of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual.* Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

U.S. Environmental Protection Agency Region IX. (2007). *Lower Eel River Total Maximum Daily Loads for Temperature and Sediment.* U.S. Environmental Protection Agency. Retrieved from https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/eel_river_lower/pdf/LER-TMDL-final-121807-signed.pdf

U.S. Fish & Wildlife Service. (2023). .*S. Fish & Wildlife Service National Wetlands Inventory*. Retrieved from National Wetlands Inventory surface waters and wetlands: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

United States Geological Survey. (2000). *Riparian Areas: Functions and Strategies for Management.* Retrieved from https://pubs.usgs.gov/gip/106/pdf/gip106.pdf

Vickery et al. (2001, December 21). The management of lowland neutral grasslands in Britain: effects of agricultural practices on birds and their food resources. *Journal of Applied Ecology*, 647 - 664. doi:10.1046/j.1365-2664.2001.00626.x

Weitkamp, L. A., et al. (2015). *Status Review Update for Pacific Salmon and Steelhead Listed under the Endangered Species Act: Pacific Northwest.* National Marine Fisheries Service. Retrieved from https://www.webapps.nwfsc.noaa.gov/assets/11/8623_03072016_124156_Ford-NWSalmonBioStatusReviewUpdate-Dec%2021-2015%20v2.pdf

Wildlife Conservation Board. (2021). Final Meeting Agenda: Stream Flow Enhancement Program. *Wildlife Conservation Board Stream Flow Enhancement Program Meeting.* Sacremento: California Department of Fish and Wildlife.

Zedler, Joy B. and Kercher, Suzanne. (2005). Wetland Resources: Status, Trends, Ecosystem Services, and Restorability. *Annual Review of Environment and Resources, 30*, 39-74.

4.6 CULTURAL RESOURCES

This section analyzes the impacts to cultural resources, including potential impacts to archaeological and historic resources due to the Project. Potential impacts to tribal cultural resources are addressed in Section 4.19, Tribal Cultural Resources. This section incorporates information and analysis from the 2019 City of Ferndale Housing Element Initial Study (IS) and Negative Declaration (ND) and 2012 Historical & Cultural Resources Element, as it applies to the proposed Project. The 2017 Humboldt County General Plan EIR, a 2008 Cultural Resources Investigation of the Salt River Ecosystem Restoration Project, and the Ferndale Chamber of Commerce website were referenced as well.

ENVIRONMENTAL SETTING

PRE-SETTLEMENT HISTORIC CONTEXT

Since time immemorial, before the arrival of European-American settlers in the 1850's, Ferndale and the Humboldt Bay region were the home of the Wiyot. An Algonquian-speaking people, the Wiyot resided in settlements along the lower Mad River and Eel Rivers as well as other local streams, and along Humboldt Bay and on the hills and ridges or lands in between. Their way of life was shaped by the surroundings of forested hills, streams and rivers, the Pacific Coast, and protected marshes and sloughs of Humboldt Bay, which provided for generations of subsistence and cultural needs.

Traditional Native American culture was disrupted by Euro-American settlement and U.S. government policy. This produced significant depopulation and relocation of Native Californians from most of the lands they occupied, and these actions, combined with cultural intolerance, have led to the displacement of the Wiyot community and their inability to engage in many traditional cultural practices. However, affected Native American populations have not disappeared; rather, they have adapted to these new pressures.

Today, the Wiyot people are federally recognized in the Wiyot Tribe Reservation, the Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria. These tribes are actively involved in various tribal economic projects and in the revitalization of cultural traditions such as language, basket weaving, ceremonies, and reclaiming ancestral lands.

SETTLEMENT HISTORIC CONTEXT

After the start of the California Gold Rush from 1850 to 1860, Wiyot territory became the center of the largest concentrations of European settlers in California, north of San Francisco. The settlers utilized Humboldt Bay as a major shipping point for supplies to the gold mines on the Trinity, Klamath, and Upper Sacramento Rivers. In addition, the establishment of the redwood timber industry, and homesteading of the Eel River and Arcata Bottom for ranching and farming purposes, brought more people into the area. The influx of new settlers brought violence, including the Indian Island (Tuluwat Island) Massacre of February 26, 1860, which nearly destroyed the entire Wiyot population. The literature mentions only one Wiyot site in or near the Project area. Data collected by L. L. Loud (1918) identified one Wiyot habitation and resource procurement site near the Ferndale planning area along the Salt River. Loud provides no additional information about this site and the other ethnographical sources make no mention of it. There are no known sites in the City boundary.

Early Settlement (1850-1870's)

Although the first recorded European exploration of the Eel River was as early as 1602 by the Spanish, it wasn't until the 1850's that American vessels had begun to explore the Eel River and its tributaries drawn by the allure of the Gold Rush (Bush, 2005). As the Gold Rush wound down, the regional focus shifted towards establishing agricultural settlements that gradually expanded across the open lands surrounding Humboldt Bay, as well as into

the interior prairies and coastal valleys. During this time, the Eel River Valley was characterized by a collection of small and scattered settlements.

Prior to the establishment of Ferndale, several small Euro-American communities had already emerged in the area, notably Arlynda Corners, Port Kenyon, Grizzly Bluff, and Centerville. In 1852, settlement began in the area that would become Ferndale when two brothers from Vermont and their companion took it upon themselves to navigate beyond one of the Eel River's tributaries, the Oka't which was called the Salt River by settlers (Briggs, 2023; Fradkin, 1997). On August 25, Seth and Stephen Shaw and a man named Willard Allen navigated the Eel River by canoe, making their way up the Salt River and through Topochochwil (which later became known as Francis Creek) until they reached a leveled area near the hills (Roscoe, et al., 2008). The original landscape was full of dense vegetation and fern-filled savannahs which presented challenges for farming. Undeterred, the three men located two claims and cleared several acres of land by winter. They constructed a road and built a simple cabin, providing shelter for themselves and nine other original settlers who later moved on. Their success in land clearance attracted more settlers to the area interested in planting crops and orchards. Following this initial success, the land further turned out to be lush natural pasturage making the area ideal for dairying or cattle raising.

By 1854 Stephen William Shaw had moved back to San Francisco where he cultivated a reputation as a noteworthy artist, and eventually sold his Ferndale claim to a man named Francis Francis in 1856 (Briggs, 2023). Thus, Topochochwil became known as Francis Creek by local settlers (Roscoe, et al., 2008). Also in 1854, his brother Seth Louis Shaw, who had opted to stay on his claim, began construction of the first large house in the area. The residence was named Fern Dale after the large ferns surrounding Francis Creek and became a prominent symbol of the area's growth and development. Notably, when the house on Fern Dale was designated as the first post office in 1860, the emerging settlement also adopted the name (Briggs, 2023). The Shaw House, as the building is now called, remains a testament to Carpenter-Gothic architecture and sets the architectural tone of Ferndale as a landmark on Main Street. Its enduring presence serves as a reminder of the rich history and architectural heritage of the town.

Dairy Farming and Incorporation (1870s-1900s)

Most early settlers to California for the Gold Rush were from the northeastern Atlantic States or Nova Scotia. More settlers soon followed, often directly from Europe. Between 1852 and 1915, Ferndale was populated by settlers from Denmark, Switzerland, Canada, America, Italy, England, China, Ireland, Germany, and Portugal in various numbers (Roscoe, et al., 2008). These new residents all pursued their own individual businesses such as dairying, cattle and sheep ranching, crop growing, road building and the railroad. Dairy farming came to the area in the 1870's when Danish settlers began arriving in the area, bringing their expertise in dairy farming and agricultural practices from their homeland with them. Soon each small neighborhood of dairymen formed its own cooperative creamery and there were eleven separate creameries operating in the immediate Ferndale area by 1890. Ferndale's butter earned renown throughout the state which garnered premium prices in San Francisco and led Ferndale to acquire the nickname "Cream City". Eventually, many of the small creameries began consolidating into larger creameries. The Central Creamery on north Main Street is one such creamery and became the mother plant for one of the largest in the state. Ferndale's pioneering creameries not only contributed to the local economy but also spearheaded advancements in dairy processing and management, leading to a revolution in the dairy industry. Dairying gave Ferndale a stable industry and remains one of the more prominent industries in the region.

Aside from the dairy industry, the shipping industry began in earnest for the Eel River area in 1870. Ferndale soon emerged as a vital transportation hub which contributed to the town's overall growth and prosperity. It even

became the largest city in Humboldt County. At the time, the Salt River was able to accommodate sea-going vessels and Ferndale had its own port that acted as a terminus for stagecoach lines to the Bear River and Mattole regions to the south, with other daily stages going to Eureka and towns to the north and east. Initially farm produce from Ferndale would be hauled by wagon four miles to the west where it would be transferred from Centerville Beach to vessels anchored offshore. This route was then replaced by transporting goods to the docks and a warehouse in Port Kenyon two miles northwest of Ferndale on the Salt River, built by pioneer settler J.G. Kenyon around 1876, with the intention of establishing a trade route from the Eel River to San Francisco (Briggs, 2023). A steamer called the Thomas A. Whitelaw was the first ship commissioned to make regular runs between Ferndale and San Francisco (Ferndale Union High School, 1977). Unfortunately, the Eel River shipping industry then came to an end in 1909 after the steamer Argo was beached on the Eel River spit.

The transportation of goods from the fertile soil of the Eel River Delta to San Francisco was a constant dilemma. The residents of the Salt River Delta lived in relative isolation as they were separated from Humboldt Bay by Table Bluff, and the Eel and Salt rivers. Ferries were one of the only means by which they could cross the Eel River. There were four ferries that operated on the Eel River from 1861 to around 1916 (Where the Ferns Grew Tall 1977). The ferries stopped operating shortly after the completion of Fernbridge in 1911 (Downie & Lucey, 2005).

Previously Identified Historic Resources

National Register of Historic Places

The City of Ferndale's Main Street was designated as a Historic District in 1994 by the National Park Service and placed on the National Register of Historic Places.

> "Buildings within the City's Main Street Historic District represent two distinct architectural periods: 1) the late Victorian era of the 19th century (1880-1900) and (2) the early Modernistic period in the 20th century (1920-1936). Other styles include Italianate, Queen Anne, Neo-Classic, Bungalow, and Mission."

The period of significance is 1872-1936 beginning with the construction of the earliest extant building, the 1877 Alford's Drug Store (Poppa Joe's). The Main Street Historic District includes 39 contributing buildings that best represent a particular architectural style or are the works of local architect T.J. Frost. 13 buildings are considered non-contributing. Since the Historic District was established in 1994, some of these non-contributing structures may now qualify as contributing (current Red Front Store, Lentz's Department Store among others) because they are older than 50 years. Listed architecture according to a Survey conducted for 1994 Main Street Historic District Designation are included in the table below.

Table 4.6-1: Ferndale Historic District Resources

Name	Address	Year Built	Architectural Style	Year Listed
Alford House	207 Francis St	1884	Victorian-Second Empire	1994
Masonic Temple	212 Francis St	1891	Victorian - Eastlake-Stick	1994
Enterprise Office	219 Francis St	1881	Victorian - Commercial False Front	1994
Faulkner House	230 Francis St	1899	Bungalow	1994
Russ Bank Building	290 Francis St and 400 Ocean Ave	1891	Victorian - Eastlake-Stick	1994

Name	Address	Year Built	Architectural Style	Year Listed
Robert's Hotel/ Ferndale Hotel	315 Main St	1875	Victorian	1994
Taylor Building	325-327 Main St	1898	Victorian	1994
Enterprise Building	334 Main St	1923	Modernistic	1994
Post Office/ Drug Store Building	337 Main St	1889	Victorian - Commercial False Front	1994
M.H. Donnelly Building	341-353 Main St	1902	Victorian - Commercial False Front	1994
Loewenthal's Ferndale Reliable Store	344 Main St	1900	Victorian - Commercial False Front	1994
Brown's Office Building	350 Main St	1902	Victorian - Commercial False Front	1994
Rose Mullady's Millinery & Art Needle Store	358 Main St	1928	Victorian - Commercial False Front	1994
D.A. Bransetter Building	361 Main St	1902	Victorian - Commercial False Front	1994
Rings Pharmacy	362 Main St	1896	Victorian - Eastlake-Stick	1994
Russ & Sons Meet Market	376 Main St	1900	Victorian - Eastlake-Stick	1994
Town Clock	385 Main St	1923	n/a	1994
P.F. Hart Building	393 Main St	1896	Victorian - Eastlake-Stick	1994
Ferndale Bank	394 Main St	1911	Neoclassical	1994
New Hart Building	399-405 Main St	1924	Mission	1994
Alford's Drug/ Michel Drug Store	409 Main St	1877	Italianate	1994
Mullady Building	424 Main St	1894	Victorian - Commercial False Front	1994
Masonic-Odd Fellows Hall	425-431 Main St	1875	Victorian - Commercial False Front	1994
Meng Building	430-436 Main St	1891	Victorian - Commercial False Front	1994
Hart Theatre	441-451 Main St	1920	Modernistic	1994
Gill House/ Blackburn Building	444 Main St	1876	Commercial False Front	1994

Name	Address	Year Built	Architectural Style	Year Listed
Grangreen-Ward-Gill House	452 Main St	1870	Residence joined to storefront	1994
G.W. Williams Building	455 Main St	1888	Commercial False Front	1994
Eel River & Southern Telephone Co. Building	460 Main St	1924	Commercial False Front	1994
Dahlquist Plumbing & Electrical Shop	468 Main St	1936	Modernistic	1994
New York Cash Store/ Red Star Clothing Store	475 Main St	1898	Victorian - Eastlake-Stick	1994
Gill Building/ Hiller Building	476 Main St	1891	Commercial False Front	1994
Paine Building	484 Main St	1901	Victorian	1994
Old Red Front Store	505 Main St	1900	Italianate	1994
Kemp Building	513-525 Main St	1930	Mission	1994
Petersen's Service Station	524 Main St	1930	Modernistic	1994
R.H. Edwards Building	535 Main St	1901	Commercial False Front	1994
Hiram Hatch Building	543 Main St	1901	Commercial False Front	1994
Charles A. Doe Building	561-563 Main St	1901	Neoclassical	1994
S&E Garage and Ford Dealership	580 Main St	1927	Commercial False Front	1994

Currently, there are numerous historically significant structures (residential dwellings, barns, and other agricultural outbuildings) scattered throughout the City limits which are outside of the historic district and some are outside of the Design Control Combining Zone (D-zone), but of historical interest nonetheless. The listed architecture according to the National Register of Historic Places are included in the table below.

Table 4.6-2: Other Historic Resources

Name	Address	Year Built	Architectural Style	Year Listed
Shaw House	703 Main St	1854	Gothic	1984
Berding House (Gum Drop Tree House)	455 Ocean Ave	1875	Gothic	1983
Catholic Church of the Assumption Rectory	563 Ocean Ave	1896	Queen Anne	1982
Ferndale Public Library	807 Main St	1909	Neoclassical	1990
Alford-Nielson House	1299 Main St	1874	Victorian - Second Empire	1986

State Historic Landmark

The City of Ferndale was designated as a State Historic Landmark (No. 883) in 1975 by the California State Parks Office of Historic Preservation.

> "[This] pioneer agricultural community, settled in 1852, helped feed the booming population of mid-century San Francisco. Long known as "Cream City" Ferndale made innovative and lasting contributions to the dairy industry. Local creameries and the town's role as a transportation and shipping center in the late 19th and early 20th centuries, fostered prosperity that produced Ferndale's outstanding Victorian Gothic residences and false-front commercial architecture."

REGULATORY SETTING

FEDERAL

National Historic Preservation Act (NHPA)

The primary federal statute that addresses historic preservation is the National Historic Preservation Act (NHPA) 16 U.S.C. § 470 et seq. The NHPA outlines a comprehensive program that upholds the national policy of safeguarding America's heritage. Within its framework, the NHPA empowers various initiatives that contribute to the federal historic preservation program.

The NHPA sets forth a comprehensive program to carry out the national policy of protecting America's historic and cultural resources. It provides the authority for a number of activities that implement the federal historic preservation program, including (1) the National Register of Historic Places, (2) the matching grants-in-aid program, encouraging preservation activities at the state and local levels, (3) the Advisory Council on Historic Preservation, providing information on historic properties, and (4) the "section 106" review process.

National Register of Historic Places (NRHP) - The NRHP is "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment." The federal regulations explicitly provide that the National Register listing of private property, "does not prohibit under Federal law or regulation any actions which may be taken by the property owner with respect to the property."

Cemeteries, birthplaces, or graves of historic figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

For a property to be eligible for listing in the NRHP it must meet one of the criteria for significance (36 CFR 60.4 [a, b, c, or d]) and retain integrity. Integrity, in terms of historical significance has seven aspects including location, design, setting, materials, workmanship, feeling, and association, and is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period."

The eligibility for inclusion in the NRHP is determined by applying the following criteria, developed by the National Park Service as per provisions of the National Preservation Act:

- The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4)

Native American Graves Protection and Repatriation Act (NAGPRA)

NAGPRA (USC Title 25, Chapter 32; implemented through CFR Title 43, Part 10) "requires Federal agencies and museums (institutions that receive Federal funds) to provide information about Native American cultural items to parties with standing and, upon presentation of a valid request, dispose of or repatriate these objects to them."

STATE

California Public Resources Code and California Environmental Quality Act

Public Resources Code section 5020 et seq. is California's state historic preservation statute. This statute does not prohibit local control of historic properties. Rather, it assists local entities in encouraging historic preservation. Public Resources Code section 5020.1 established the California Register of Historic Resources, which is the authoritative listing and guide to be used by cities to identify existing historic resources deserving of protection. Once a historic site is included in the register, any project that may have an adverse impact on the site is subject to heightened scrutiny under the California Environmental Quality Act (CEQA). CEQA defines historic resources more broadly than does federal law, and includes both procedural and substantive project review requirements and imposes stricter environmental review requirements than required for federal review under NEPA.

Historical resources are defined as buildings, sites, structures, or objects, each of which may have historic, architectural, archaeological, cultural, or scientific importance. Under CEQA, a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (PRC Section 21084.1). Demolition, replacement, substantial alteration, and relocation are actions that would change the significance of a historical resource (CEQA Guidelines Section 15064.5). The following steps are normally taken in a cultural / historic resources investigation to comply with CEQA:

1. Identify historical resources, including archaeological resources, as defined in CEQA Guidelines Section 15064.5 within a study area;
2. Evaluate the significance of the cultural resources based on established thresholds of significance;
3. Evaluate the impacts of a project on historical resources; and
4. Develop and implement measures to mitigate the impacts of the project on historical resources, including significant archaeological resources.

Because the Project is located on non-federal land in California, it is also necessary to comply with state laws pertaining to the inadvertent discovery of human remains of Native American origin. The procedures that must be followed if burials of Native American origin are discovered on non-federal land in California are described in the Impacts and Mitigation Measures section below.

PRC Section 5097.98 states that if Native American human remains are identified within a project area, the landowner must work with the Native American Most Likely Descendant as identified by the Native American Heritage Commission to develop a plan for the treatment or disposition of the human remains and any items associated with Native American burials with appropriate dignity. These procedures are also addressed in Section 15046.5 of the CEQA Guidelines. Section 30244 of the PRC requires reasonable mitigation for impacts on paleontological and archaeological resources that occur as a result of development on public lands, which can be considered applicable to the portions of the Project located within the Caltrans right of way.

Office of Historic Preservation

The California State Office of Historic Preservation is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration, and protection of California's irreplaceable archaeological and historic resources under the direction of the State Historic Preservation Officer and the State Historical Resources Commission.

The Office of Historic Preservation reviews and comments on federally sponsored projects pursuant to National Historic Preservation Act Section 106, and state programs pursuant to PRC Sections 5024 and 5024.5, which provide policies and plans for preserving and maintaining all state-owned historical resources or eligible historical resources. The Office of Historic Preservation also reviews and comments on local government and state projects pursuant to CEQA.

A variety of programs have been created by the Office of Historic Preservation in order to manage historic resources and to determine eligibility for classification as a historic resource. The programs that Office of Historic Preservation administers include: the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest. Each program has different eligibility criteria and procedural requirements.

California Native American Historical, Cultural and Sacred Sites Act

This Act applies to both state and private lands. The Act requires that upon discovery of human remains, that construction or excavation activity cease and that the county Coroner be notified. If the remains are of a Native American, the Coroner must notify the Native American Heritage Commission. The Native American Heritage Commission then notifies those persons most likely to be descended from the Native American remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

California Health and Safety Code

California Health and Safety Code Section 7050.5 prohibits disinterring, disturbing, or removing human remains from a location other than a dedicated cemetery. Section 7050.5 also requires that construction or excavation be stopped in the vicinity of discovered human remains until the Coroner can determine whether the remains are those of a Native American. If determined to be Native American, the Coroner must contact the California Native American Heritage Commission.

REGIONAL AND LOCAL

City of Ferndale General Plan Historic & Cultural Resources Element

The City of Ferndale Historical & Cultural Resources Element (2012) contains the following specific goals and related policies that address cultural and historic resources within the City.

GOAL 1: Preserve Ferndale's distinctive and valued historic district, structures, and sites representing various periods of the City's history.

Policy 1.1 - Use state recommended and federally established guidelines for designation of potential historic and cultural resources.

Policy 1.2 - Maintain a database of identified historic and cultural resources.

Policy 1.3 - Develop a program to identify and document historic buildings, structures, and sites. There shall be a clear process for both adding and removing identified resources.

Policy 1.4 - Encourage the use of the Secretary of Interior Standards and the State Historic Building Code as guidelines for the preservation and rehabilitation of historic properties.

Policy 1.5 - Encourage the City to apply for designation as a Certified Local Government.

GOAL 2: Highlight the City's historic resources for promoting heritage tourism as a means of economic development.

Policy 2.1 - Encourage the Ferndale Chamber of Commerce, Ferndale Museum, and other similar organizations to prepare informational materials related to Ferndale's most significant historical resources.

Policy 2.2 - Recognize Ferndale's historic and cultural resources as an asset and encourage programs that preserve, protect and promote these resources.

Policy 2.3 - Encourage the Ferndale Chamber of Commerce, Ferndale Museum, and other similar organizations to conduct events with heritage themes to attract tourists/ visitors to Ferndale.

GOAL 3: Educate the community and visitors about the value of the City's historical resources through promotional materials.

Policy 3.1 - Provide information and educational materials related to historic preservation to the public and work with other groups to sponsor preservation related trainings and workshops.

Policy 3.2 - Support and encourage the creation and distribution of educational and interpretive materials related to historic preservation for residents and visitors.

Policy 3.3 - Support the development and production of educational and interpretive materials that promote Ferndale's history and historic resources.

Policy 3.4 - Encourage Ferndale Elementary and High School teachers and students to incorporate historic preservation in class instruction and assignments.

GOAL 4: Guide new development design and context to be compatible with existing historic resources, community character and livability of Ferndale. This guidance will minimize potential for demolition of existing structures and sites through preservation practices.

Policy 4.1 - Support and encourage new construction that is compatible in scale and character with nearby cultural resources and historic districts.

Policy 4.2 - Effectively utilize the City's Design Review process when permitting projects in the Design control combining zone. This process includes clear review and appeal procedures.

Policy 4.3 - Evaluate the need for a demolition permitting process. Take into consideration potential impacts resulting from demolition of historic resources and potential added expense and regulatory delay in issuing demolition permits.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to cultural resources from implementation of the Project would be significant if it would:

a) Cause a substantial adverse change in the significance of an historical resource (pursuant to Section 15064.5);
b) Cause a substantial adverse change in the significance of an archaeological resource (pursuant to Section 15064.5); or
c) Disturb any human remains, including those interred outside of dedicated cemeteries.

The significance of a cultural resource and subsequently the significance of an impact to a resource is determined by consideration of whether that resource can increase our knowledge of the past and the importance of that resource to cultural groups, among other things. The determining factors are site content and degree of preservation. A finding of archaeological significance follows the criteria established in the CEQA Guidelines. CEQA Guidelines Section 15064.5 (Determining the Significance of Impacts to Archaeological Resources) states the following:

> (3) […] Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code, Section 5024.1, Title 14 CCR, Section 4852).
>
> (4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.
>
> (b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. Historical resources are "significantly" affected if there is demolition, destruction, relocation, or alteration of the resource or its surroundings. Generally, impacts to historical resources can be mitigated to below a level of significance by following the Secretary of the Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings [Guidelines Section 15064.6(b)]. Documentation of a historical resource by way of historic narrative photographs or architectural drawings will not mitigate the impact of demolition below the level of significance [Guidelines Section 15126.4(b)(2)].

Preservation in place is the preferred form of mitigation for archaeological resources, as it retains the relationship between artifact and context, and may avoid conflicts with groups associated with the site [Guidelines Section 15126.4 (b)(3)(A)]. If an archaeological resource does not meet either the historical resource or the more specific "unique archaeological resource" definition, impacts do not need to be mitigated [Guidelines Section 15064.5(e)].

PROJECT IMPACTS AND MITIGATION

Impact CUL-01: Would the Project cause a substantial adverse change in the significance of an historical resource (pursuant to Section 15064.5)?

Finding CUL-01: The Project allows development that would be subject to state and local regulations and policies regarding the preservation of historical resources, therefore impacts would be less than significant.

The City is noted for the many Victorian style houses that were built in the early 1900's and its historic Main Street. The City seeks to maintain the historic resources and both the Land Use Element and Safety Element of the General Plan incorporate policies that are intended to reduce or avoid impacts to historic resources. Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.3 – Design Standards
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.2 – Tourism and Resident Services • Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities
Safety Element	Goal 1	• Policy 1.6
Safety Element	Goal 4	• Policy 4.3
Safety Element	Goal 6	• Policy 6.6

The Land Use Element allows for new development in existing residential, commercial, and mixed-use areas. In addition to the General Plan policies above, the Ferndale Zoning Ordinance includes design review procedures applicable development within the design review zone. These procedures were established to ensure that new buildings and structures and/or the modification, alteration, and/or enlargement of existing buildings or structures occur in a manner consistent with General Plan policies. The Design Review procedures are established to:

- Ensure that new structures and/or modification, alteration, enlargement of existing structures occur in a manner consistent with Ferndale General Plan policies.
- Preserve the natural beauty of the town's site and setting.
- Ensure that the architectural design of structures and their materials and colors are visually harmonious with and conceptually consistent in character and scale with surrounding area.
- Ensure that the design and location of signs and their material and colors are visually harmonious with surrounding development.
- Allow the City to make appropriate determination of environmental effects.

Relevant sections of the CEQA guidelines outlining a framework for analyzing potential impacts on built environment historical resources in the study area include the following:

- Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (Section 15064.5(b)(1)).

A resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that convey its historical significance. Under CEQA, projects following the Secretary of the Interior's Standards for the Treatment of Historic Properties are generally considered mitigated to a less than significant impact. CEQA requires the lead public agency to mitigate any impacts through enforceable measures included in project permits, agreements, or other measures. Impacts can be direct, indirect, and cumulative. Impacts have the potential to diminish a historical resource's historic integrity, i.e., the physical characteristics that convey its significance. Historic integrity is assessed with regard to the retention of the historical resources' characteristics of location, setting, design, materials, workmanship, feeling, and association.

The Secretary of the Interior's Standards for the Treatment of Historic Properties provide guidance on the preservation and protection of cultural resources listed in or eligible for listing in the National Register of Historic Places. This is also used for properties listed in or eligible for listing in the California Register of Historical Resources, and lead agencies use the Secretary of the Interior's Standards for the Treatment of Historic Properties for other CEQA historical resources. Four types of treatments, Preservation, Rehabilitation, Restoration, and Reconstruction, comprise the Secretary of the Interior's Standards for the Treatment of Historic Properties.

The City encourages the use of Secretary of Interior Standards for historic properties and proposed projects are subject to applicable General Plan, design review, and other zoning standards. Implementation of the Land Use and Safety Elements is not anticipated to result in the physical demolition, destruction, relocation, or alteration of known historical resources in the City. Existing policies are in place to protect historic resources. Therefore, impacts to historical resources as a result of Land Use and Safety Element implementation will be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact CUL-02: Would the Project cause a substantial adverse change in the significance of an archaeological resource (pursuant to Section 15064.5)?

Finding CUL-02: The Project allows for potential new development primarily in already disturbed areas. New development would be required to comply with existing regulations and guidelines for any discovery of previously unknown archaeological resources. Therefore, Project impacts are expected to be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.3 – Design Standards

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-2	• Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities

The Land Use Element and Safety Element promotes residential development that would include development on vacant and developed locations. Previously identified as well as unrecorded archaeological resources could exist and be unearthed during excavation and grading. Discovery of archaeological resources can occur even in already developed areas, as older buildings are known to have been built on top of or within archaeological deposits. The proposed Elements would be compliant with all General Plan and Municipal Code policies and programs which provide guidelines for any discovery of previously unknown artifacts. As such, any impacts to archeological resources are anticipated to be less than significant.

With adoption of the Land Use and Safety Elements and implementation of existing policies and standards, the impact associated with the potential inadvertent discovery of archaeological resources would be reduced to a less than significant level.

MITIGATION MEASURE

No mitigation measures would be required.

Impact CUL-03: Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

Finding CUL-03: The Project allows development in areas already disturbed for agricultural purposes with no known history of human remains or burial identified within the Project area. New development would comply with existing regulations and guidelines for any discovery of human remains. Therefore, Project impact is expected to be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.3 – Design Standards
Land Use Element	Goal LU-2	• Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities

Any development encouraged by the Land Use Element and Safety Element is in areas already historically disturbed by farming or settlement, so the likelihood of discovering human remains is low but not nonexistent. In the event that human remains are discovered during development of any site, the Project proponent would be required to comply with the State Health and Safety Code 7050.5, which prohibits further disturbance until the County Coroner has made a determination of the origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified immediately of the find. If the remains are determined to be prehistoric, the coroner is required to notify the Native American Heritage Commission (NAHC), which will determine and identify a Most Likely Descendant (MLD). With the permission of the owner of the land or his/her authorized

representative, the descendant may inspect the site of the discovery. The descendant shall complete the inspection within 24 hours of notification of the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Mandatory compliance with the State Health and Safety Code is required in the course of excavation for any development project accommodated through implementation of the Land Use Element. As such, any impacts to human remains would be considered less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Briggs, E. (2023). *The History of Victorian Ferndale*. Retrieved from Visit Ferndale - Ferndale Chamber of Commerce: https://www.visitferndale.com/history-of-ferndale

Bush, J. L. (2005). *Exploring and Settling Humboldt Bay.* Retrieved from CSU Scholarworks: https://scholarworks.calstate.edu/downloads/gx41mk96b

Downie, S. T., & Lucey, K. P. (2005, May). *Salt River Watershed Assessment.* Retrieved from California Department of Fish and Wildlife Website: https://nrmsecre.dfg.ca.gov/FileHandler.ashx?Document=175825

Ferndale Union High School. (1977). *Where the Ferns Grew Tall: An Early History of Ferndale.* Ferndale Museum.

Fradkin, P. L. (1997). *The Seven States of California: A Natural and Human History.* University of California Press.

History. (n.d.). Retrieved from Wiyot Tribe: https://www.wiyot.us/148/Cultural

Loud, L. (1918). *Ethnogeography and Archaeology of the Wiyot Territory.* Retrieved from UC Berkeley Digital Asset Library: https://digitalassets.lib.berkeley.edu/anthpubs/ucb/text/ucp014-004.pdf

Roscoe, J., Whiteman, E., Burns, J., Rich, W., Rohde, J., & Van Kirk, S. (2008). *A Cultural Resources Investigation of the Salt River Ecosystem Restoration Project.* Retrieved from Humboldt County: https://humboldtgov.org/Archive/ViewFile/Item/810

4.7 ENERGY

This section provides a profile of the energy use and sources of energy in the City of Ferndale, a summary of the current regulatory setting, and an analysis of the potential impacts associated with increased energy use as a result of implementing the updated Land Use and Safety Elements.

ENVIRONMENTAL SETTING

The City of Ferndale is located in a coastal area with moderate temperatures and significant winter rainfall. Average temperatures vary from 48 degrees in the winter to an average of 58 degrees in the summer. Temperatures rarely exceed 80 degrees as cooler ocean air is drawn in by inland heat maintaining cooler temperatures year-round in the coastal areas.

The City of Ferndale's energy comes from a variety of sources, nearly all of it sourced from outside the City limits. Electric power service is provided by the Redwood Coast Energy Authority (RCEA) and Pacific Gas & Electric Company (PG&E). Currently, RCEA supplies 89 percent of Ferndale's electric power while PG&E supplies the remaining 11 percent. The City of Ferndale also relies on energy in the form of propane, wood, solar, and transportation fuels.

In 2013, RCEA prepared an Energy Assurance Plan for the City of Ferndale that outlined current residential and non-residential energy use trends as well as a detailed analysis of the City's operational energy use. Electric power use for the residential and non-residential sector was updated as part of this analysis. Electricity use data were provided by both RCEA and PG&E. The following subsections describe the energy use in Ferndale by each resource type.

ELECTRICITY

The Redwood Coast Energy Authority (RCEA) is a local government agency that procures electricity on behalf of its member agencies as a Community Choice Aggregator (CCA). RCEA's member agencies include the Blue Lake Rancheria Tribe, the Yurok Tribe, the County of Humboldt, and the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad, and the Humboldt Bay Municipal Water District. Ferndale became a member agency of the RCEA CCA in 2018.

RCEA supplies the generation portion of the electricity service for the majority of Humboldt County and Ferndale service areas by purchasing power on the regional wholesale market. PG&E provides electric power transmission and billing services to all customers of both agencies. By managing the supply of power locally, RCEA is able to provide a slightly cleaner power mix and at a slightly lower cost while also providing local programs to reduce energy use and increase the local supply of renewable energy.

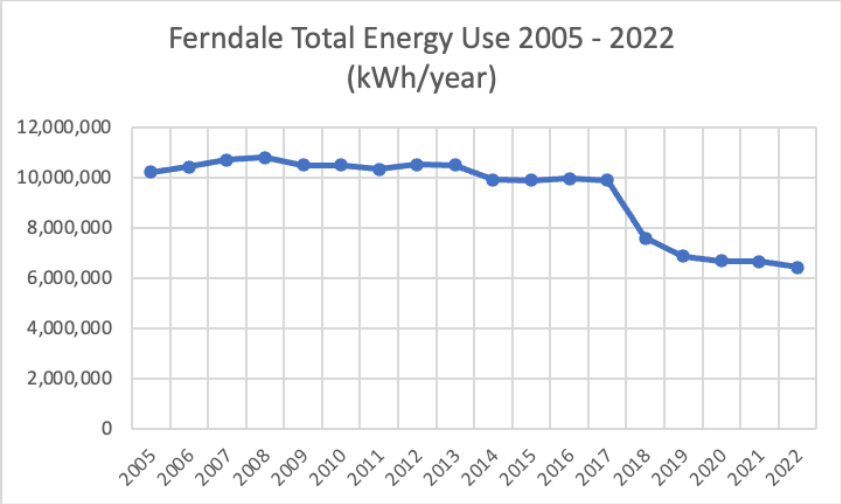
Power Content Labels provide details on the current (2022) mix of energy resources used to produce power supplied in Humboldt County and therefore the City of Ferndale. In 2022, the RCEA standard REpower grid mix consists of 50 percent renewable energy resources, 45 percent large hydroelectric, and 5 percent unspecified power. Local biomass power from the Scotia power plant constitutes 15 percent of the RCEA renewable energy mix. The RCEA 2022 REpower+ electricity resource mix consists of 100 percent renewable energy resources. The PG&E grid 2022 electricity resource mix consists of 38 percent renewable energy resources, 49.3 percent nuclear energy, 5 percent natural gas and other fuels, and 8 percent large hydroelectric. RCEA has set a goal of 100 percent carbon-free electricity by 2025 and 100 percent local renewable energy by 2030.

The residential sector electrical energy use in Ferndale comprises 63 percent of the total consumed each year. The remaining demand (37 percent) is made up by the commercial, industrial, agricultural, and direct access

entities. PG&E and RCEA data show that current (2022) total electrical energy use in Ferndale is 6,423,493 kWh/year. RCEA 2022 aggregated energy use data show that average electricity use per Ferndale household is 5,707 kWh/year, which translates to 2,868 kWh / resident each year.

Data for electrical energy use provided by PG&E in the "Community Wide GHG Inventory Report for FERNDALE 2005 to 2022" show that energy use in Ferndale has been declining in all sectors. These trends can be seen in the following figures.

Figure 4.7-1: Ferndale Energy Usage 2005-2022



The energy use data presented above includes government use and all other commercial, industrial, agricultural, and residential uses. The figures below break out the residential and commercial sectors.

Figure 4.7-2: Ferndale Residential Energy Usage 2005-2017

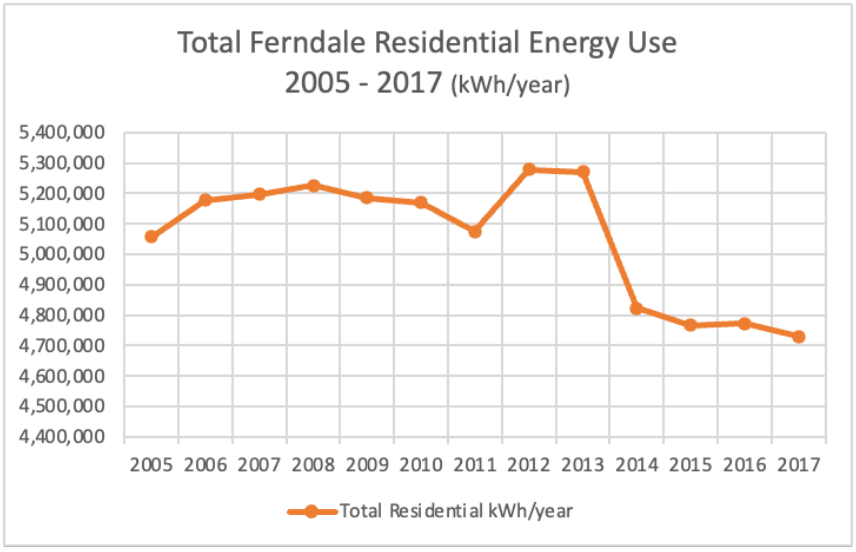
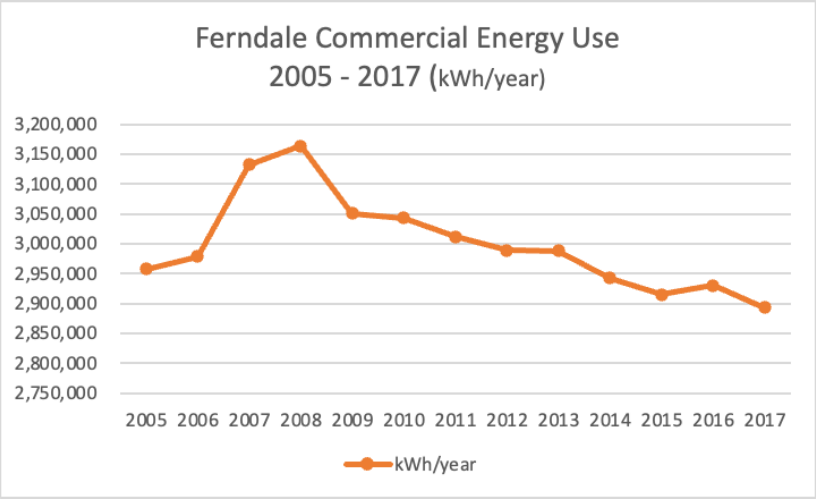


Figure 4.7-3: Ferndale Commercial Energy Usage 2005-2017



The decline in energy use over time can be attributed to many factors. Known factors include increased lighting efficiency and the increasingly widespread use of LED technology, increases in general appliance efficiency standards, increased efficiency of commercial loads such as variable-speed pumps and air handling systems, programmable thermostats, and increasing rooftop solar installations.

By 2045, increased use of electric household appliances such as cooktops and heat pumps for space and water heating as well as electric vehicle charging is expected to create new demand for power in Ferndale. This will likely be balanced to some degree by installation of solar electric panels on rooftops reducing the amount of energy delivered via power lines.

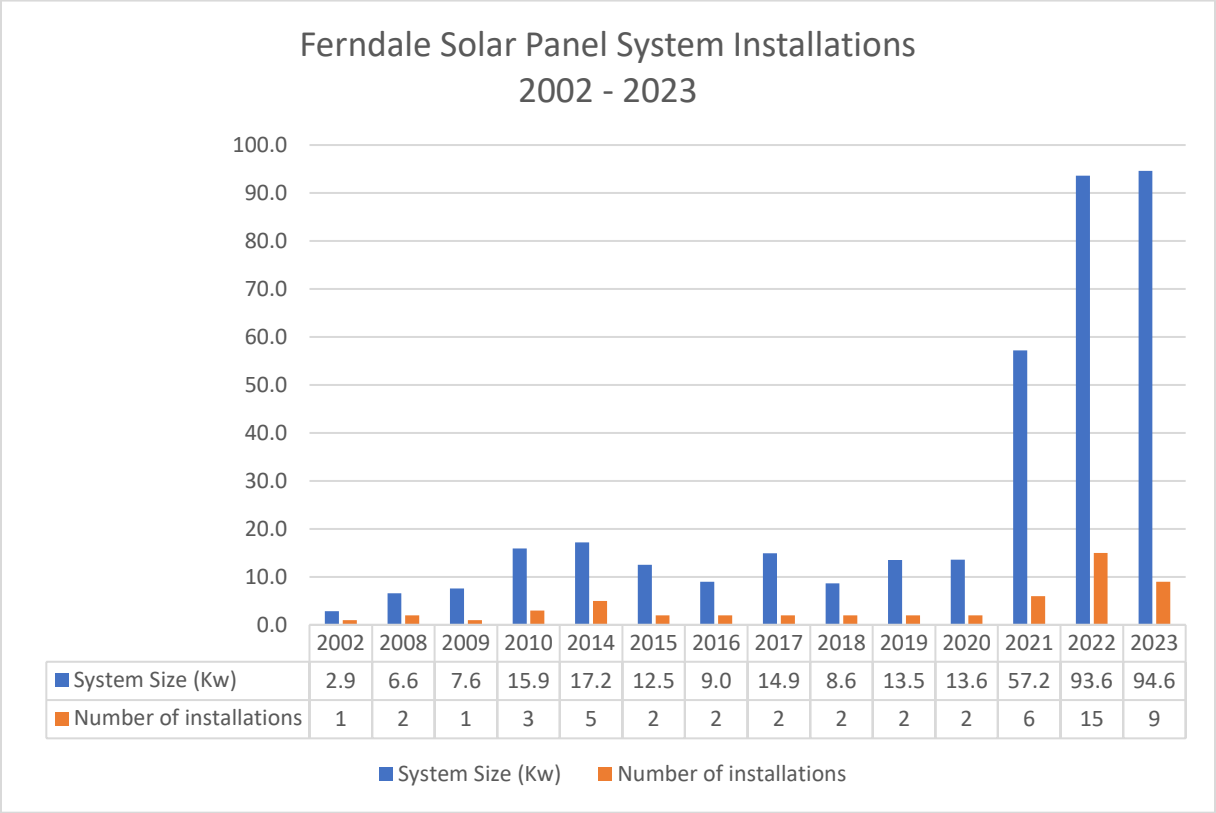
Wood & Propane

The RCEA 2013 Energy Assurance Plan found that "Ferndale consumes wood and propane in the residential sector, primarily for heating and cooking. On average, there were approximately 100 households using a total of approximately 250 cords of wood per year. About half that number of households use propane gas for an average total of nearly 50,000 gallons per year." As the number of households and population has not changed substantially since the time of this report, it is assumed that these conditions remain the same in 2023.

Solar

The California Distributed Generation Statistics data indicates that solar installations in Ferndale have been increasing in recent years. Figure 4.7-4 shows there were nine solar projects in Ferndale in 2023 that had a combined capacity of 94.6 kilowatts (kW).

Figure 4.7-4: Solar Installations in Humboldt County 2002-2023



	2002	2008	2009	2010	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
System Size (Kw)	2.9	6.6	7.6	15.9	17.2	12.5	9.0	14.9	8.6	13.5	13.6	57.2	93.6	94.6
Number of installations	1	2	1	3	5	2	2	2	2	2	2	6	15	9

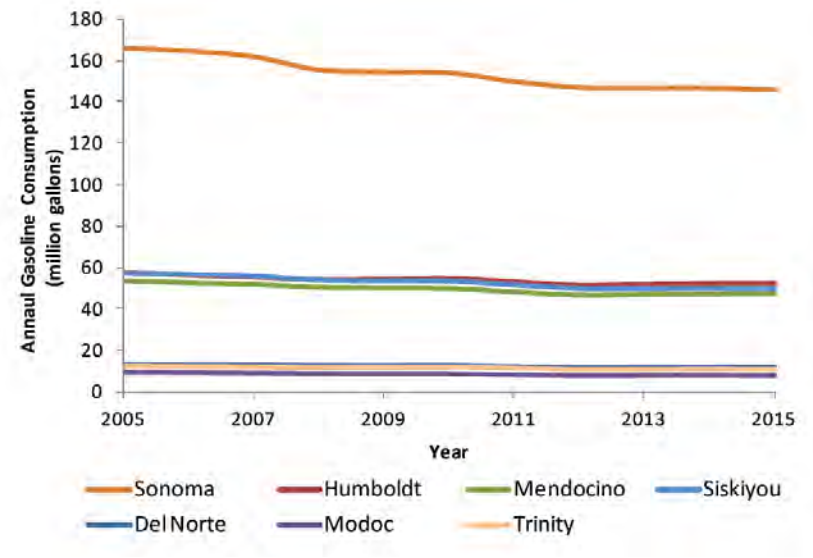
According to the "PG&E Energy Summary for Ferndale 2005 to 2011" report, Ferndale had two interconnected systems with a total of 11kW of installed solar electric capacity in 2011. The RCEA 2013 Energy Assurance Plan found that the City of Ferndale had 22kW of installed solar energy generation capacity across five rooftop systems. This increase in Ferndale's rooftop solar electric capacity over time is part of a larger trend of increasing solar energy generation in Humboldt County and state-wide.

TRANSPORTATION FUELS

According to the California Energy Commission gasoline has remained the dominant fuel within the transportation sector, with diesel fuel and aviation fuels following. Compared to other Northern California counties, Humboldt consumes less gasoline and diesel fuel primarily due to differences in population. The figure below, excerpted from a 2017 North Coast Resource Partnership (NCRP) report, shows that annual fuel consumption in Humboldt County has largely remained[1].

[1] North Coast Resource Partnership Integrated Strategic Plan, *Climate Change Mitigation, GHG Emissions Reduction And Energy Independence*, 2017

Figure 4.7-5: Estimated Annual Gasoline Sales in the NCRP Region



The City of Ferndale currently uses gas and diesel for most of its transportation fuel, but electricity is increasing as a transportation fuel source. Ferndale currently imports all gasoline and diesel fuels and has four installed electric vehicle charging stations with a total of seven charging ports.

Vehicle Miles Traveled (VMT) data can be used to assess transportation fuel use. The California Office of Transportation Safety (CA OTS) provides VMT data at the Humboldt County level which is summarized in Table 4.7-1 below. It shows Humboldt County VMT rates were increasing before the Covid-19 pandemic and then sharply dropped when the pandemic caused major changes in the commuting patterns of residents.

Table 4.7-1: VMT Data for Humboldt County

Humboldt County Daily & Annual VMT			
Year	Daily VMT	Annual VMT	% change from previous year
2017	3,637,775	1,327,787,875	
2018	3,709,743	1,354,056,195	2%
2019	4,077,550	1,488,305,750	10%
2020	3,471,775	1,267,197,875	-15%
2021	3,525,067	1,286,649,455	2%
Net change from 2017 - 2021			-3%

Source: California Office of Transportation Safety,

Additional data from the 2007 Humboldt County General Plan Update Transportation Study and the 2014 Humboldt County Association of Governments (HCAOG) show a declining trend in VMT over a longer time horizon as seen in Table 4.7-2 below.

Table 4.7-2: VMT Change in Humboldt County

Rate of change in VMT Humboldt County (% / year)	
Annual VMT Rate of change 2007 – 2013	0.20%
Annual VMT Rate of change 2013 – 2017	-0.04%
Annual VMT rate of change 2017 – 2021	-0.62%
Annual VMT rate of change 2007 – 2021	-0.13%

VMT data from the California Office of Transportation Safety were used in conjunction with the same year's population to determine an average per capita VMT for Humboldt County residents (11,657 miles per year / capita). This value was used to determine the total VMT for Ferndale in the current and future planning years.

Assuming Ferndale has the same proportions of vehicle class types as Humboldt County, Ferndale's current annual vehicle miles traveled (VMT) is 15,981,721 miles per year for all vehicles. These data are shown in the table below. This level of vehicle usage results in an estimated 730,736 gallons of transportation fuels (gasoline and diesel fuels) consumed in the Ferndale community each year.

Table 4.7-3: VMT/Year in Ferndale 2023

Vehicle Class Type	2023 (VMT/year)
Cars	10,250,784
Trucks	5,140,143
Motorcycles	590,794
Total	**15,981,721**

REGULATORY SETTING

FEDERAL

Energy Policy and Conservation Act (1975)

Established Corporate Average Fuel Economy (CAFE) standards and required the distribution of fuel economy information to consumers. Established the Strategic Petroleum Reserve and mandated vehicle fuel economy standards.

National Energy Act (1978)

Established alternative fuel programs and energy efficiency initiatives. The Act was comprised of Five Statutes:

1. Energy Tax Act - Created the Gas Guzzler tax for vehicles with mileage below specified fuel economy levels and offered income tax credit for homeowners using solar, wind, or geothermal energy resources.
2. Natural Gas Policy Act - Set natural gas pricing rules and gave the Federal Energy Regulatory Commission jurisdiction over most natural gas production.
3. National Energy Conservation Policy Act - Updated minimum energy performance standards set forth in 1975 including requiring mandatory compliance, set requirements for energy audits in federal agency operations, provided loans the purchase of solar heating / cooling systems, established grants for implementation of energy conservation measures in schools, hospitals, local government operations, and public housing.

4. Power Plant and Industrial Fuel Use Act - Encouraged development of power plants fueled by coal, nuclear energy, and alternative fuels. Repealed in 1987 by the Natural Gas Utilization Act.
5. Public Utility Regulatory Policies Act - Promoted the use of renewable energy resources and encouraged the use of cogeneration power plants.

Energy Security Act (1980)
Title I: U.S. Synthetic Fuels Corporation Act - Moved research and development for synthetic fuels away from the Department of Energy and into a public-private partnership model in hopes of speeding up the creation of a market for domestically produced synthetic liquid fuels.

Title II: Biomass Energy and Alcohol Fuels Act - Provided loan guarantees for small-scale biomass energy projects.

Title III: Energy Targets - Required submission of energy targets for net imports.

Title IV: Renewable Initiatives - Established incentives for the use of renewable energy resources.

Title V: Solar Energy and Energy Conservation - Encouraged energy conservation and the use of solar energy.

Title VI: Geothermal Energy Act - Authorized loans for exploration evaluation of geothermal reservoirs; loans canceled if reservoir deemed unviable for development.

Title VII: Acid Precipitation Program - Established a task force to study the causes and risks of acid rain.

Title VIII: Strategic Petroleum Reserve - Established a rule that 500,000,000 barrels of crude oil must be in storage before any can be sold into the market.

Alternative Motor Fuels Act (1988)
Established vehicle manufacturer incentives in the form of CAFE credits.

Energy Policy Act (1992)
Provided financial incentives to users/developers of clean-fuel vehicles established regulations requiring federal and state fleet operators to build an inventory of alternative fueled vehicles. Amended the National Energy Conservation Policy Act of 1978. Created framework for wholesale electricity generation.

Farm Security and Rural Investment Act (2002)
Included mandatory funding for the procurement of bio-based products, grants and loans for renewable energy and energy efficiency projects, and the bioenergy program.

Energy Policy Act (2005)
Provided to increase energy efficiency in existing homes or buy or lease hybrid and alternative fuel vehicles. Required all public utilities to offer net metering on request and increased required amounts of renewable fuel content in gasoline sold in the U.S. Encouraged expansion of domestic energy production.

Energy Independence and Security Act (2007)
Raised the Corporate Average Fuel Economy (CAFE) standards to 35 miles/gallon by 2020. Instituted new conservation measures for federal fleet vehicles; authorized increased taxpayer-funded biofuel production. Revised standards for appliances and lighting; all federal buildings required to use Energy Star lighting products. Provided training for green jobs and loans for small business to implement energy efficiency improvements.

Food, Conservation, and Energy Act (Farm Bill) (2008)
Included loan guarantees for bio-refineries, payments to support expansion of advanced biofuels, and grants to support biofuel research and development. Expanded the Rural Energy for America Program.

Energy Improvement and Extension Act (2008)
Provided tax credits and exemption for alternative fuels and fuel-efficient technologies.

The American Recovery and Reinvestment Act (2009)
$800 billion economic stimulus package aimed at job creation. Provided investments in tax credits to homeowners to make energy efficiency improvements, and investments in technologies to reduce diesel engine emissions, new energy infrastructure, and renewable energy research.

Infrastructure Investment and Jobs Act (2021)
Supports a variety of alternative fuel and advanced vehicle technologies through grant programs, studies, technology standards, loans, research and development, fleet funding, and other measures. The Act increased investment in electric vehicle charging stations, alternative fuel infrastructure, electric vehicle batteries, electricity grid upgrades, and zero emission vehicles.

Inflation Reduction Act (2022)
Supports a variety of alternative fuel vehicles (AFV) and infrastructure technologies through tax credits, grant programs, and loan programs. Additionally, the federal government has established minimum efficiency standards for certain appliances and equipment, such as refrigerators and washing machines. Federal standards may require a maximum allowable energy consumption or dictate that a product contains particular features.

Energy Star Program
Energy Star is a voluntary labeling program introduced by the United States Environmental Protection Agency (USEPA) to identify and promote energy-efficient products to reduce greenhouse gas emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs and heating and cooling systems. Under this program, appliances that meet specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, the USEPA joined with the Energy Department to expand the program, which now also includes certifying commercial and industrial buildings as well as homes (USEPA 2022).

STATE

Warren-Alquist Act (1974)
Established the California Energy Commission (CEC) as the state's primary energy policy and planning agency. The CEC mission is to reduce energy costs and the environmental impacts of energy use, while ensuring a safe, resilient, and reliable supply of energy.

Title 24 California Code of Regulations (1978)
Established the Renewable Portfolio Standard (RPS) program, requiring 20 percent of retail electricity sales to be generated from renewable energy sources by 2017.

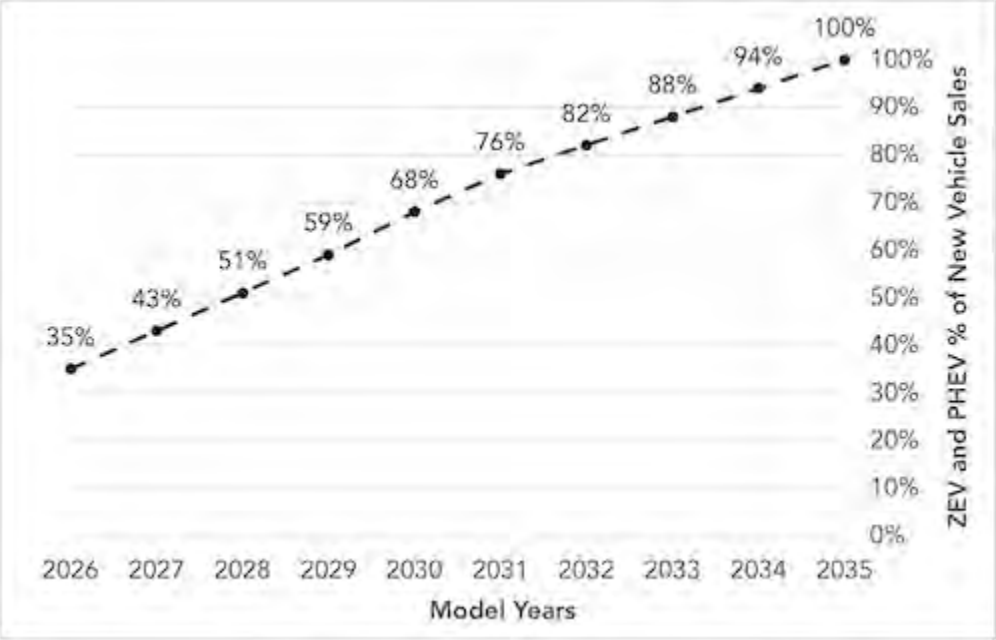
Assembly Bill 117 (2002)
Assembly Bill 117 (Stat. 2002, Ch. 838; see California Public Utilities Code section 366.2) authorizes any California city or county, whose governing body so elects, to combine the electricity load of its residents and businesses in a community-wide electricity aggregation program known as Community Choice Aggregation ("CCA").

Senate Bill 1078 (2002)
Required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017.

2002 Assembly Bill 1493
California vehicle GHG emission standards were enacted under AB 1493 in 2002 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. In January 2012, the California Air Resources Board (CARB) approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

This legislation was amended in 2022 to support Governor Newsom's Executive Order 79-20 that requires all new passenger vehicles sold in California to have zero emissions by 2035. The Advanced Clean Cars II regulations require an increasing number of zero-emission vehicles (ZEV's) to be sold. Figure 4.7-6 below shows how the new annual zero-emission vehicle requirement increases over time.

Figure 4.7-6: ZEV Sales Requirements under Advanced Clean Cars II Program, 2026-2035



Energy Action Plan I (2003)
Accelerated the timeline for the 20 percent renewable electricity goal to 2010.

Energy Action Plan II (2005)
Recommended goal of 33 percent renewable electricity goal by 2020.

Senate Bill 107 (2006)
Codified Energy Acton Plan I goal of 20 percent renewable electricity by 2010.

Executive Order S-1-07 (2007)

Also known as the Low Carbon Fuel Standard, EO S-1-07, issued in 2007, established a statewide goal that requires transportation fuel providers to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. EO S-1-07 was readopted and amended in 2015 to require a 20 percent reduction in carbon intensity by 2030, the most stringent requirement in the nation. The new requirement aligns with California's overall 2030 target of reducing climate changing emissions 40 percent below 1990 levels by 2030, which was set by SB 32 and signed by the governor in 2016.

State Alternative Fuels Plan (2007)

AB 1007 requires the California Energy Commission (CEC) to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with CARB and in consultation with other federal, state, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce GHG emissions; and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007 and AB 8, Statutes of 2007) proactively implements this plan.

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (CCR Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Executive Order S-14-08 (2008)

Expanded the state's Renewable Portfolio Standard to 33 percent renewable power by 2020.

Executive Order S-21-09 (2009)

Directed the California Air Resources Board (CARB) under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

California Green Building Code (2009)

The California Green Building Standards Code (CALGreen) is Part 11 of the California Building Standards Code or Title 24 and is the first statewide "green" building code in the nation. The purpose of CALGreen is to improve public health, safety, and general welfare by enhancing the design and construction of buildings. Enhancements include higher energy efficiency, better air quality, and improved daylighting. The first CALGreen Code was adopted in 2009 and contained only voluntary measures. Many of the original voluntary green building standards became mandatory in the 2010 CALGreen edition, which went into effect in January 2011. It has been updated every three years. The latest version went into effect January 1, 2023.

Senate Bill X1-2 (2011)

Codified the 33 percent renewable electricity by 2020 goal. Established new Renewable Portfolio Standard (RPS) that requires all publicly-owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators to adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013, and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.

Senate Bill 350 (Clean Energy and Pollution Reduction Act) (2015)
Established new goals for clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 requires the following:

- Increase California's RPS from 33 percent by 2020 to 50 percent by 2030;
- Double existing building energy efficiency by 2030; and
- Facilitate the growth of renewable energy markets within the western U.S. by reorganizing the California Independent System Operator (CAISO).

REGIONAL AND LOCAL

The Redwood Coast Energy Authority (RCEA) was formed in 2003 as a joint powers authority (JPA), representing seven municipalities (the cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Trinidad, and Rio Dell) and Humboldt County. RCEA's mission statement is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient, and renewable resources available in the region. The Humboldt County Board of Supervisors has designated RCEA to implement strategies related to this mission on a regional basis.

Comprehensive Action Plan for Energy (CAPE) (2013)
Established strategies to target the following objectives:

- Regional Energy Planning & Coordination: Facilitate coordinated strategic energy planning within Humboldt County, provide a forum for addressing countywide energy issues, and assist local jurisdictions with completing greenhouse gas inventories, climate action plans, and general plan energy elements.
- Energy Reliability & Security: Coordinate with utility providers and other local governments on energy emergency planning and response, evaluate transmission and distribution systems, and conduct a climate change risk assessments and develop adaptation plans.
- Economic Development: Support the development of emerging energy technologies, attract and support energy-sector businesses and ventures, and provide training and workforce development assistance for jobs in the energy field.
- Built Environment Efficiency: Develop and implement programs which encourage energy efficiency and renewable energy retrofits in existing buildings, and support local implementation of state-wide energy efficiency standards and goals.
- Education: Through a variety of channels, provide the community with comprehensive education and information on energy conservation, energy planning, renewable energy, and energy-efficiency.
- Water & Waste: Support water and waste conservation initiatives that will result in reduced energy demand and or renewable energy generation.
- Transportation: Encourage energy-efficient, health-promoting modes of travel such as walking, bicycling, and public transit, and support the adoption of alternative fuels.
- Energy Generation & Utility Services: Promote policies which seek to meet local energy needs with a diversity of renewable energy resources, distributed generation, and cogeneration.

RePower Update (2019)
The strategies within this 2019 update to the CAPE will be implemented between 2020-2030 to achieve the goals listed below:

- Achieve net-zero greenhouse gas emissions county-wide by 2030.

- Support the wide-spread installation of customer solar photovoltaic energy systems, with a target to increase installations to a rate of one system every day for the next decade and reach 30MW of customer solar installed by 2025 and 50MW installed by 2030.
- Accelerate the adoption of electric vehicles, with a target of over 6,000 electric vehicles on the road in Humboldt County by 2025 and 22,000 vehicles by 2030. Develop public, workplace, and residential electric vehicle charging infrastructure necessary to support these county-wide electric vehicle targets.
- Work with other local public entities to reduce vehicle miles traveled in Humboldt County by at least 25 percent by 2030.
- By 2030 reduce greenhouse gas emissions from transportation by over 65 percent through reductions in vehicle miles traveled, improved vehicle efficiency, the adoption of electric vehicles, and, where determined to be an effective emissions-reduction strategy, the use of biofuels as a bridge to a full transition to zero-emissions vehicles. Maintain a trajectory of emissions reduction to eliminate the use of fossil fuels by 2050.
- By 2025 100 percent of RCEA's power mix will be from a combination of state-designated renewable energy sources—solar, wind, biomass, small hydroelectric, and geothermal—and state-designated net-zero-carbon-emission existing large hydroelectric facilities.
- By 2030 Humboldt County will be a net exporter of renewable electricity and RCEA's power mix will consist of 100 percent local, net-zero-carbon-emission renewable sources.
- Humboldt County can effectively respond to regional and local disruptions to energy supply and distribution systems through modernization of the local electric grid, the deployment of local distributed energy resources, and the development of community microgrids.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

This analysis has been prepared within the context of the CEQA Guidelines Appendix F Energy Conservation. The goal of conserving energy implies the wise and efficient use of energy through decreasing overall per capita energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources. Under Appendix F of the CEQA Guidelines, a significant energy impact would occur if new development facilitated by the Proposed Project would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Potential energy impacts resulting from adopting the Land Use and Safety Elements were evaluated based on projected population growth, anticipated development under proposed housing density allowances, Ferndale grid electricity use, propane and wood use, and annual vehicle miles traveled (VMT) by Ferndale residents.

Implementation of the proposed Land Use Element would accommodate the projected new population growth under the High Growth Scenario, which is an additional 157 persons by the year 2045. During this planning period, 85 new homes are projected and six percent more businesses will be constructed, and the new residents will consume energy in their homes and drive more vehicles. This analysis evaluates the changes in energy use in homes and commercial businesses as well as changes to annual vehicle miles traveled, which is an indicator of energy use of the transportation sector.

The analysis of potential energy resource impacts is qualitative rather than project-specific because the type of development being evaluated is potential development that may or may not occur in the future. Also, the current General Plan documents Ferndale has a supply of land which can accommodate more new homes than the expected demand of 85 new homes between 2023 – 2045 under this EIR's high-growth scenario. Given this, the evaluation of energy resource impacts in this EIR focuses on changes in the type of new development allowed by the proposed Land Use and Safety Element updates. This analysis evaluates the use of energy resources (e.g., fuel and electricity) during the construction and operation of the Project. Specifically, the analysis considers whether construction and operation of the Project would use large amounts of fuels or energy, and whether they would be used in a wasteful manner.

PROJECT IMPACTS AND MITIGATION

Adoption of the updated Safety Element would have no impact on energy use. Policy 4.4 and Program 4.d in the Safety Element are designed to reduce VMT through development of new trails:

- Policy 4.4: Continue to support active transportation by investing in pedestrian and bike trails.
- Program 4.d: Designate and/ or develop five miles of new trail systems in and around the City by 2040 to support active transportation.

By helping reduce VMT in the future, the Safety Element arguably would have a beneficial impact on energy use. The Safety Element is not further discussed in this section.

Impact EN-01: Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation?

Finding EN-01: Although increasing population and housing will increase the total energy consumed in Ferndale, the Land Use and the Safety Element Updates contain policies that support use of alternative transportation fuels, and reduced vehicle miles traveled through infill development and improvements to the non-automotive transportation system. Therefore, adoption of these Elements would have a less than significant impact.

The Proposed Project's policies that may also help reduce per-capita VMT through encouraging infill and mixed-use growth plus improved active transportation conditions are:

- Policy LU-1.4 – Residential Infill encourages the infilling and completion of residential neighborhoods to take full advantage of available public services including drainage facilities. Placing new development within areas already developed with existing roads, sidewalks and buildings will minimize the conversion of open space to developed uses thereby reducing the footprint of new development and keeping new residential development close to existing services and jobs.
- Policy LU-1.8 – Multi-Modal Transportation: Encourage multi-modal travel by increasing bike and pedestrian routes throughout the City enhanced with bike parking, exercise stations, and safe roadway crossings. Actively seek out public access easements and/or right-of-way acquisition for pedestrian creek crossings to better connect Ferndale Housing and potential development on APN 030-091-030 (see policy LU-1.7) to Main Street. Potential crossings may include Fern Avenue, Vanston Avenue, E Street, or an alternative location.
- Policy LU-1.9 – Right-of-Ways: Ensure street design and right-of-way acquisition will support pedestrian

and bike mobility. This includes seeking acquisitions from willing landowners to develop a broader trail network within the City.

- Policy LU-1.10 – Community Spaces: Require higher-density neighborhoods and mixed-use areas to incorporate small public spaces and have sidewalks furnished with appropriate ADA pedestrian amenities providing comfortable and attractive settings for high levels of pedestrian activity.
- Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.
- Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.
- Policy LU-2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.

Also, policies of the Land Use Element promote conservation of existing agricultural lands, timberlands and open space areas. This has the effect of limiting new development in undisturbed areas which will keep new residential development close to existing services and jobs minimizing the number of vehicle miles traveled for those that live close to where they work, shop and play.

- Policy LU-3.1, Conservation, requires existing open space and agricultural land at the edges of and surrounding the City to be preserved to protect natural resources which will also protect water quality.
- Policy LU-4.3, Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.
- Policy LU-3.5, Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.

New development allowed under the proposed Land Use Element is anticipated to result in increased energy consumption associated with new residential, commercial, and industrial electric power and woodstove/propane use, and increased vehicle travel as described in the following paragraphs.

ELECTRICITY

According to the Redwood Coast Energy 2022 Energy Use data, the current residential per capita electrical energy use in Ferndale is estimated to be 2,868 kWh/year and the per household energy use is estimated to be 5,707 kWh/year on average. Population growth resulting from new housing availability and projected regional trends in commercial and industrial development will increase demand for electric power in Ferndale. Estimated changes in electricity are shown in the tables that follow. This analysis conservatively assumes that current average annual energy use / house will remain consistent throughout the planning horizon for all single-family and additional

dwelling units (ADUs) constructed[2]. This analysis assumes that multi-family housing units use 50 percent less energy as compared to the single-family houses and ADUs. For the purposes of this analysis it is also assumed that of the 85 new housing units there would be 59 single-family and 26 multi-family units built by 2045. Growth in the commercial / industrial sector is projected to be up to 6 percent growth through the planning horizon (2045).

Table 4.7-4: Projected Change in Ferndale Total Energy Use 2022 - 2045

Year	Projected Cumulative Increase in New Homes and Commercial / Industrial Establishments	Projected Cumulative Additional Energy Use (kWh/year)	Total Cumulative Annual Energy Use (kWh/year)	% Change
2022	-	-	6,423,493	-
2045	85 new housing units, 6% commercial/ industrial energy increase	482,213	6,906,706	7.5 %

WOOD / PROPANE

The 2013 Ferndale Energy Assurance Plan estimated that approximately 100 Ferndale households are using a total of approximately 250 cords of wood per year or 2.5 cords wood per household per year. If the maximum number of new houses are built (85) and woodstoves are installed in each, the resulting additional consumption of wood would be 70 cords / year. This assumes that all new housing would be equipped with modern (U.S. EPA 2022 standard), highly efficient woodstoves that burn one third less wood per hour for the same heat output. As the new housing in Ferndale is likely to include multifamily dwellings such as apartments, it is not likely that every new housing unit will be equipped with a wood stove reducing the additional demand for wood energy below the projection.

The 2013 Ferndale Energy Assurance Plan estimated that approximately 50 Ferndale houses use 50,000 gallons of propane per year or an average of 1,000 gallons of propane / household / year. This analysis assumes 50 percent of new housing (approx. 43 households) will use propane appliances for cooking, space heating and water heating. The resulting projected growth in annual propane use based on new housing development would be approximately 42,500 additional gallons of propane/ year.

TRANSPORTATION FUELS

Increases in population will result in new drivers commuting to jobs and travelling within and outside of the Ferndale area. This growth and activity could result in additional annual vehicle miles traveled and additional gallons of transportation fuels consumed. The VMT calculations assume that only 92.3 percent of the new population will be >15 years of age and thus able to drive a car (U.S. Census Bureau American Community Survey 2022 data), or over 85 and still retain a license (69 percent according to the U.S. Federal Highway Administration 2021 Highway Statistic Series). All other age groups are assumed to be driving cars. Also, this projection assumes the future VMT per driver will remain at the 2023 level, which is 11,657 miles/year.

[2] This assumption is likely to over-project energy use because 1) per capita energy use has been declining in recent years as shown in Figures 4.7-2 and 4.7-3, and 2) the proposed Land Use Element Update encourages construction of multifamily homes which are far more energy efficient than the existing housing stock, largely comprised of detached single-family homes.

The projections shown below also assume all new cars will be fueled with gasoline or diesel fuel. In actuality, the share of cars and trucks that will be powered by clean transportation fuels such as electricity will continue to grow per California state laws. The tables below reflect the maximum additional transportation fuel demand where all new vehicles are powered by gas and diesel fuels.

Table 4.7-5: Ferndale Projected Annual VMT and Gallons of Fuel Used 2023 - 2045

Year	Projected Cumulative Increase in # Drivers	Projected Cumulative Increase in VMT/Year	Projected Cumulative Increase in Fuel Use (Gallons/Year)	Projected Total Cumulative Fuel Use (Gallons/Year)	% Change
2023	-	-	-	730,736	-
2045	145	1,688,637	77,210	807,946	10.6%

A 2011 study by the EPA concludes housing type is a very significant determinant of energy consumption. Fairly substantial differences are seen in detached versus attached homes, but the most striking difference is the variation in energy use between single-family detached homes and multifamily homes, due to the inherent efficiencies from more compact size and shared walls among units[3]. Moderate energy-efficient building technologies, such as those qualifying for Energy Star performance, also generate household energy savings that are notable but not as significant as the housing location and type. The study found that multifamily housing types used 50 percent less energy than detached single-family homes.

The Land Use Element Update involves the reclassification of several land use designations that will encourage new multifamily uses and increased residential densities in or near already developed areas, as well as residential and commercial infill in underutilized existing buildings. The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Proposed changes to the Land Use Map #'s 1, 4 – 7, 11 and 12 will all increase the residential development potential on parcels already planned and zoned for residential use, some of which are included in the residential land inventory of the 2019 Housing Element. The proposed changes that involve replacing the existing R-1 Residential Low-Density designation with an R-2 Medium Density designation will also allow duplexes, triplexes and other multifamily configurations as principally permitted uses. By encouraging multifamily housing at higher densities, the proposed land use map changes are expected to reduce the electrical, wood and propane energy use in new residential developments.

The Land Use and Safely Element Updates are aligned with the state and local goals for reducing energy use and vehicle miles traveled. The Land Use Element contains policies for residential and commercial infill which will provide additional housing near the City center allowing for alternative modes of travel and a potential reduction in VMT. Additionally, new buildings, redevelopment, and building additions would be subject to California Title 24 Energy Code and CALGreen Code Mandatory Measures (such as electric-ready, solar power generation infrastructure and onsite energy storage requirements). In summary, regulatory compliance would increase the energy efficiency of buildings and vehicles; as a result, there will be a reduced energy demand from new buildings and transportation activities. Additionally, the Land Use Element includes policies and measures for energy efficient design, buildings, land use mixes, and public and active transportation modes that would minimize energy demand associated with implementation of the general plan. Therefore, adoption and implementation of the proposed Ferndale Land Use and Safety Element Updates would not result in a potentially significant

[3] USEPA; Location Efficiency and Housing Type - Boiling it Down to BTUs, 2011

environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, therefore the Project would have a less than significant impact.

MITIGATION MEASURE

No mitigation measures would be required.

Impact EN-02: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Finding EN-02: The Land Use and the Safety Elements contain policies that support the implementation of the state and local plans for increasing energy efficiency and therefore would have a less than significant impact.

The implementation of the Land Use Element Update would result in a significant impact if the policies contained in the Update would obstruct a state or local plan for renewable energy or energy efficiency. New development allowed under the proposed Land Use Element could result in increased energy consumption associated with new residential electric power and woodstove/propane use, and increased vehicle travel.

The Land Use and Safely Elements would not obstruct state and local plans for energy efficiency. All new construction must be built to Title 24 standards which includes energy efficient appliances and design. All new housing will also be required to install solar panels to offset daily electricity demand. The proposed Land Use Map changes and policies support housing development at higher densities than the current Land Use Element as described earlier in this section. These are consistent with the plans and policies for increasing energy efficiency described in the Regulatory Setting section. Based on this analysis, adoption and implementation of the proposed Ferndale Land Use and Safety Elements would not conflict with state or local plans to increase renewable energy or energy efficiency, therefore the Project would have a less than significant impact.

MITIGATION MEASURE

No mitigation measures would be required.

BIBLIOGRAPHY

Argonne National Laboratory (2013). Updated Emission Factors of Air Pollutants from Vehicle Operations in GREET using MOVES.

Argonne National Laboratory (2021). Motor Vehicle Emissions Simulator (MOVES 3) Emissions Factors.

California Air Resources Board. Advanced Clean Cars II. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed 10/9/23.

California Air Resources Board (2021). Methods to Find the Cost-Effectiveness of Funding Air Quality Projects; Emission Factor Tables.

California Department of Motor Vehicles; Vehicles Registered by County. https://www.dmv.ca.gov/portal/dmv-research-reports/research-development-data-dashboards/vehicles-registered-by-county/. Accessed 2/6/24.

California Distributed Generation Statistics; Ferndale. https://www.californiadgstats.ca.gov/download/interconnection_rule21_projects/ accessed 3/11/24.

California Energy Commission (2022). Building Energy Efficiency Standards Summary.

California Environmental Quality Act (CEQA) Guidelines Appendix F. https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2016_CEQA_Statutes_and_Guidelines_Appendix_F.pdf. Accessed 2.14.24.

California Office of Traffic Safety Daily Vehicle Miles Traveled 2020. https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv_view_count=1327&wpv-wpcf-year=2020&wpv-wpcf-city_county=Humboldt+County&wpv_filter_submit=Submit. Accessed 1/16/24.

Census American Community Survey data for Ferndale City, CA. https://data.census.gov/table/ACSST5Y2022.S0804?g=160XX00US0623910. Accessed 1/16/24.

Chargepoint EV Charging Station Map. https://driver.chargepoint.com/stations/3587151. Accessed 2/6/24.

Humboldt County Association of Governments (2013/2014). Humboldt Regional Transportation Plan 2013/2014 Update.

Humboldt County General Plan Update (2012). Transportation Study. https://humboldtgov.org/273/General-Plan-Update. Accessed 1/16/24.

Humboldt County General Plan Update (2017). Chapter 12 Energy Element.

North Coast Resource Partnership Integrated Strategic Plan. (2017). Climate Change Mitigation, GHG Emissions Reduction and Energy Independence, 2017.

Pacific Gas & Electric Company (PG&E) Energy Data Request - Public Data Sets (2023). https://pge-energydatarequest.com/public_datasets/download?type=gaz&file=PGE_2023_Q4_GasUsageByZip.zip. Accessed 2/12/24.

Pacific Gas & Electric Company Power Content Label (2022). https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed 2/4/24.

Pacific Gas & Electric Company (2023). Community Wide GHG Inventory Report for FERNDALE 2005 to 2022. Provided to City staff upon request.

Plugshare EV Charging Stations Map. https://www.plugshare.com/directory/us/california/ferndale. Accessed 2/6/24.

Redwood Coast Energy Authority Aggregated Energy Use Data for the City of Ferndale. Personal communication Joseph Sloan February 2024.

Redwood Coast Energy Authority (2013). City of Ferndale Energy Assurance Plan (EAP) Draft. City of Ferndale / Planwest Partners document on file.

Redwood Coast Energy Authority. City of Ferndale Energy Use Data Request. Personal communication with Joseph Sloan January 2024.

Redwood Coast Energy Authority (2012). Humboldt County Comprehensive Action Plan for Energy (CAPE).

Redwood Coast Energy Authority Greenhouse Gas Emissions. https://redwoodenergy.org/greenhouse-gas-emissions/. Accessed 2/8/24.

Redwood Coast Energy Authority Power Resources. https://redwoodenergy.org/power-resources/. Accessed 2/2/24.

Redwood Coast Energy Authority (2019 update). RePower Humboldt; The Redwood Coast Energy Authority's Comprehensive Action Plan for Energy.

South Coast Air Quality Management District Default Combustion Emission Factors (Revised 2022). https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/default-combustion-emission-factors.pdf?sfvrsn=12. Accessed 2.11.24.

United States Department of Energy Alternative Fuels Data Center; Key Federal Legislation. https://afdc.energy.gov/laws/key_legislation. Accessed 2.11.24

United States Department of Energy, Average Fuel Economy by Major Vehicle Category. https://afdc.energy.gov/data. Accessed 1/16/24.

United States Department of Transportation Federal Highway Administration. Highway Statistic Series. https://www.fhwa.dot.gov/policyinformation/statistics/2021/dl20.cfm. Accessed 2/14/24.

United States Energy Information Administration Carbon Dioxide Emissions Coefficients. https://www.eia.gov/environment/emissions/co2_vol_mass.php. Accessed 2.11.24

United States Environmental Protection Agency Emissions Factor Hub; Table 9 End of Life Treatment of Solid Products. https://www.epa.gov/climateleadership/ghg-emission-factors-hub. Accessed 2.11.24.

United States Environmental Protection Agency. (2011). Location Efficiency and Housing Type - Boiling it Down to BTUs, 2011.

United States Environmental Protection Agency. Burn Wise; Choosing the Right Woodburning Stove. https://www.epa.gov/burnwise/choosing-right-wood-burning-stove#:~:text=While%20older%20uncertified%20stoves%20release,of%20EPA%2Dcertified%20wood%20stoves. Accessed 1/16/24.

4.8 GEOLOGY AND SOILS

This section analyzes geology and soils related impacts associated with development facilitated by the project. This section incorporates information and analysis from the 2022 City of Ferndale Drainage Master Plan and the 2017 Humboldt County General Plan Update Final EIR for section 3.8 Geology and Soils. The distribution and relationship of geology and soil influences the location, form, and quality of surface water and groundwater. In turn, these features are shaped, to a greater or lesser extent, by standing and flowing water, whether on the ground surface or beneath it. Further discussion of hydrology and groundwater for the Project area are discussed in Section 4.11 of this Draft EIR, Hydrology and Water Quality.

ENVIRONMENTAL SETTING

DEFINITIONS

Fault Line – Fractures in the Earth's crust along which movement has occurred.

Quaternary Fault – The Quaternary Fault and Fold database comprises information on faults and associated folds in the United States that exhibit geological evidence of surface deformation caused by large earthquakes in the past 1.6 million years (Myr). Quaternary faults are those that have been observed at the surface and have experienced movement within the last 1.6 million years. The database was established in 1993 when the Quaternary time period was defined as <1.6 Myr based on the 1983 Geologic Time Scale. However, subsequent revisions in 1999, 2009, and 2018 have updated the Quaternary time period to 1.8 Myr, 2.6 Myr, and 2.58 Myr, respectively, as reflected in the GSA Geologic Time Scale.

Lithology – The study of the general physical characteristics of a rock or the rocks in a particular area.

REGIONAL SETTING

Geology

The State of California is divided into distinct geologic provinces. Each of these provinces displays landscapes that are unique and defining based on geology, topographic relief and climate. The City of Ferndale is within the Coast Range which extends along the coast of California from the Oregon border almost to Point Conception in Santa Barbara County (HCAOG, 2014). The Coast Ranges of California are northwest-trending mountain ranges with elevations generally ranging from 2,000 to 4,000 feet, and occasionally reaching up to 6,000 feet above sea level. These ranges and valleys run parallel to the San Andreas Fault, while the western side is bordered by the Pacific Ocean. The coastline features uplifted, terraced, and wave-cut formations. Composed of thick Mesozoic and Cenozoic sedimentary strata, the northern and southern Coast Ranges are separated by the San Francisco Bay depression. The northern ranges are characterized by irregular, knobby, and landslide-prone topography of the Franciscan Complex. To the east, the border is marked by strike-ridges and valleys in Upper Mesozoic strata. In some regions, volcanic cones and flows from the Quien Sabe, Sonoma, and Clear Lake volcanic fields overlay the Franciscan rocks. The Coast Ranges run parallel to the active San Andreas Fault, which extends over 600 miles from Point Arena to the Gulf of California. West of the San Andreas Fault lies the Salinian Block, a granitic core stretching from the southern extent of the Coast Ranges to the north of the Farallon Islands. Inland, the Franciscan and Yager complexes dominate the terrain, while the lower reaches of the river basins and areas surrounding Humboldt Bay are characterized by sand and other materials deposited by flowing water which are referred to as alluvial deposits. Alluvial deposits comprise a variety of material including gravel, sand, silts, and clay which have been eroded from upstream sources.

The City of Ferndale is located within the larger Eel River watershed which encompasses 3,680 square miles across Trinity, Mendocino, Humboldt, Glenn, and Lake Counties. The watershed's dominant geologic formation is the

Franciscan Formation, which is prone to landslides and is highly erodible, particularly on steep slopes. However, the lower Eel River area, where the Project site is located, is characterized by over 50% Cenozoic Sedimentary rocks (HCAOG, 2014). The Eel River basin is characterized by its mountainous terrain, which has experienced uplift in the post-Miocene geological period. The bedrock beneath the basin consists predominantly of sedimentary and metasedimentary formations, accounting for approximately 99 percent of the underlying geology. These formations have undergone deformation, faulting, and local shearing, and some areas have undergone metamorphism due to the accumulation of subducted continental margin deposits. The substrate consists of alluvial deposits, primarily comprising fine-grained river-related material and flood deposits interbedded with silts, clays, and fine sands from nearby watercourses such as the Salt River, Francis Creek, and Eel River. Due to their young age, these deposits generally have low consolidation levels. Consolidation levels refer to how compact or dense sediment can become over time due to the weight of overlying materials. Materials with low consolidation are relatively loose or not well-compacted materials, making them vulnerable to liquefaction in the event of strong ground shaking.

Geomorphology and Topography

During the mid-Pleistocene, the Eel River was one of three rivers that drained into Humboldt Bay (HCAOG, 2014). Eventually, the Eel River was diverted by tectonic uplift and now drains directly into the Pacific Ocean just south of Humboldt Bay. The greater Eel River basin is characterized by the accumulation of substantial amounts of unconsolidated alluvial deposits sourced from the Eel and Van Duzen rivers, as well as streams originating from the surrounding uplands. The Eel River now stands out for having the largest mean annual sediment load among rivers along the contiguous U.S. Pacific coast (Humboldt County Groundwater Sustainability Agency, 2022).

Northeast-southwest directed compression associated with collision of the Gorda and North American tectonic plates dominates the region. The Gorda plate is actively subducting beneath North America north of Cape Mendocino along the southern portion of the Cascadia Subduction Zone (CSZ). Crustal deformation in the overriding North American plate associated with the subduction of the Gorda plate is expressed as a fold-and-thrust belt, approximately 50 miles wide, within the accretionary margin of the North American plate (Carver 1987).

Local Setting

Local Geologic Setting

The geology of the City is primarily classified as Q – Marine and Nonmarine (continental) Sedimentary rocks which is described as alluvium, lake, playa, and terrace deposits. A small portion of the City in the hill areas to the south is classified as Qoa – Marine and Nonmarine (continental) Sedimentary rocks which is described as older alluvium, lake, playa, and terrace deposits. Soils in the area are primarily Weott (0 to 2 percent slopes) with some Loleta (2 to 5 percent slopes), Fiedler-Petellen-Nanningcreek complex (30 to 50 percent slopes), and Swainslough (0 to 2 percent slopes). Various other soils exist in the area in minimal amounts.

The Project is located in a complex, dynamic tectonic setting. Due to the dynamic crustal deformation associated with location near the Mendocino Triple Junction, there is a high level of seismicity in the region; the north coast region of California is the most seismically active region in the continental United States. Primary seismic hazards in the Planning Area include earthquake ground shaking, surface fault rupture, liquefaction, and tsunami potential. Geologic hazards not specifically related to earthquakes include landslides and soil stability.

Site Lithology

The fold-and-thrust belt in the region around Ferndale features a prominent structural downwarp known as the "Eel River syncline" (Humboldt County Groundwater Sustainability Agency, 2022). This syncline, a broad synclinal fold, is a key component of the geological landscape. It influences a series of sedimentary units from the Plio-Pleistocene period, collectively referred to as the "Wildcat Group." This geological phenomenon has resulted in the formation of a basin within the consolidated basement rocks of the region, encompassing the Wildcat Group and the underlying Franciscan formation.

The Wildcat Group comprises five sedimentary formations—Pullen, Eel River, Rio Dell, Scotia Bluffs, and Carlotta formations—that were deposited in the ancestral Eel River basin. These formations reflect a sequence of shallowing lithologies, transitioning from inner-shelf fine-grained sandstone, siltstone, and mudstone to near-shore sands and gravels. This upward coarsening pattern represents a regression from a deep-water offshore environment to a near-shore marine or terrestrial alluvial environment. Notably, Wildcat Group units unconformably overlay the regional bedrock material, the Franciscan Complex.

Seismic Hazards

The severity of the impact of an earthquake on a community depends on the intensity and duration of ground shaking and on the occurrence of other seismically-induced phenomena. Factors related to severity include the magnitude of the seismic event, the distance between the community and the event fault, and on local geologic and soil conditions. The greatest source of earthquake damage is caused by ground shaking, particularly horizontal ground acceleration. The City is susceptible to ground shaking caused by multiple nearby earthquake fault zones including the Little Salmon, Russ, Bear River, and Mendocino fault zones. Fault lines are fractures in the Earth's crust along which movement has occurred.

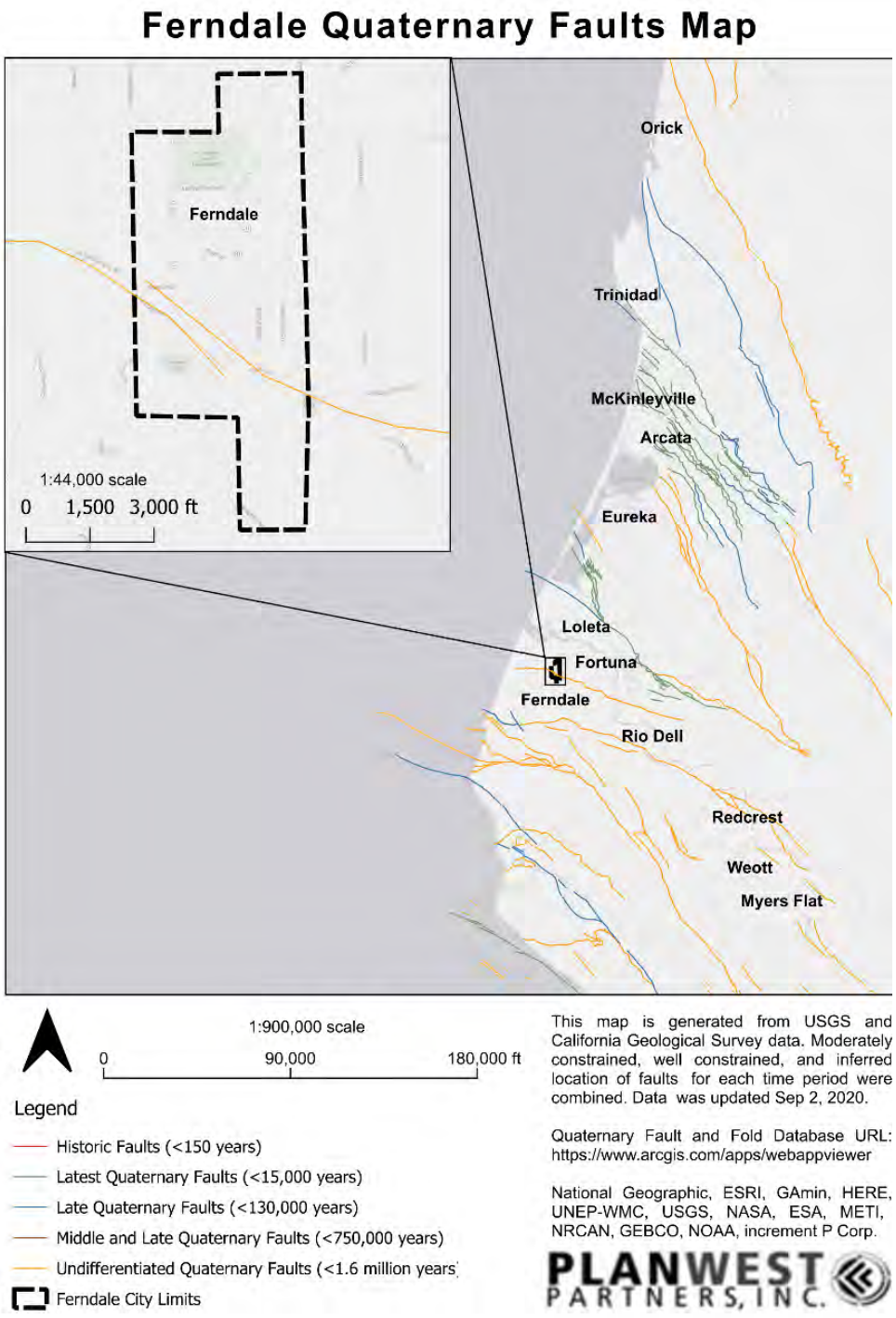
The Project site is not located within a State-designated Alquist Priolo Fault Zone (California Earthquake Hazards Zone Application , 2021). The closest Alquist-Priolo Zone is the Little Salmon Fault Zone located approximately 6 miles northeast of Ferndale. However, the Project site is located within the Cascadia Subduction Zone, a 1,000 km long dipping fault that stretches from Northern Vancouver Island to Cape Mendocino California. It separates the Juan de Fuca and North America plates. The New Juan de Fuca plate was created offshore along the Juan de Fuca ridge. The Juan de Fuca plate moves toward, and eventually is shoved beneath, the continent (North American plate). Much of Northern California lies close to the boundaries between three tectonic plates, the Pacific Plate, the Gorda Plate and the North American Plate, which meet at the Mendocino Triple Junction. The Mendocino Fracture Zone marks the transform boundary between the Gorda and Pacific plates.

There are two Quaternary fault lines located within the Planning Area; one is moderately constrained, and the other is inferred in location. Both fault lines are shown in the figure below. Quaternary fault lines refer to geological faults that have been active during the Quaternary period, which spans approximately the last 2.6 million years up to the present day. When describing fault lines as "moderately constrained," it typically means that while there is evidence suggesting the presence and activity of the fault, the exact location, geometry, and behavior of the fault may not be precisely determined. This could be due to various reasons such as limited geological data, incomplete mapping, or complexities in the fault system. "Inferred" in this context indicates that the existence of the fault is deduced or presumed based on indirect evidence rather than direct observation. Direct evidence, on the other hand, might include geological features such as offset sedimentary layers, landscape features like scarps or ridges, or seismic activity would probably be direct evidence of faulting.

The western portions of Humboldt County, and adjoining offshore areas, are regions of moderate to high seismicity. Cape Mendocino (southwest of Ferndale) experiences the highest concentration of earthquake events

in the continental United States (Humboldt County, 2012). The area near Cape Mendocino is a complex region where three crustal plates, the Pacific Plate, the Gorda Plate, and North American Plate intersect to form the Mendocino Triple Junction.

Figure 4.8-1: Ferndale Quaternary Faults



Source: (California Earthquake Risk Map & Faults Humboldt, 2023)U.S. Geological Survey and California Geological Survey, Quaternary fault and fold database for the United States, accessed August 1, 2019, at https://www.usgs.gov/programs/earthquake-hazards/faults

Historically, earthquakes have caused extensive damage to structures in Ferndale. From 1981 to May 2023, there have been 45 earthquakes in the area magnitude 5.9 or greater according to United States Geological Survey (Pinedo, 2023). The 1906 San Francisco Earthquake damaged more than 40 structures in Ferndale's downtown and toppled 98 percent of the town's chimneys (Dengler, 2008). On January 22, 1923, a 7.2 earthquake centered off Cape Mendocino caused damage to Ferndale structures. On April 25 and 26, 1992, a series of three earthquakes (a 7.2-magnitude main shock and two strong aftershocks measuring magnitude 6.5 and 6.7) struck about 35 miles south of Eureka, causing the brick facade of Valley Grocery to collapse and damage to an estimated 80 percent of the other downtown buildings (Christensen, 2011). This resulted in an estimated $10.4 million worth of damages in Ferndale (NOAA, 1992). On January 9, 2010, a magnitude 6.5 earthquake occurred about 25 miles offshore of Ferndale and was the largest local earthquake since the 1992 Cape Mendocino Earthquakes.

The last major earthquake in the area was a 6.4 on the moment magnitude scale on December 20, 2022. The epicenter was off the coast but only ten miles from Ferndale (Magnitude 6.4 Earthquale near Ferndale, California, 2022). It was followed by over 250 aftershocks and resulted in significant damage including impacting the integrity of Fernbridge which connects Ferndale to 101 via Route 211 (Burns, 2023). Several months after the earthquake, the area was still experiencing aftershocks and Caltrans was continuing to patch cracks. Repairing damage initiated by the earthquake has caused Caltrans to discuss the future of access to Ferndale, including the possibility of replacing the bridge which Caltrans estimated could take 9-15 years to construct (Alexander, 2023).

Some soils in the Planning Area may be subject to liquefaction as a result of seismic activity. Liquefaction occurs when earthquakes cause soils to become almost like quicksand and lose their ability to support structures. Fine unconsolidated sand or silt saturated with water is particularly subject to liquefaction; Ferndale's location on an alluvial plain means it may be underlain by layers of such materials and thus subject to potential liquefaction during a strong earthquake. Liquefaction may result in sinking, tilt, distortion, or destruction of buildings and bridges, rupture of underground utility lines, and ground surface cracking and spreading. A majority of the Planning Area is located in a potential liquefaction area (see Figure 4.8-2 below).

Soils in the Planning Area may also be subject to the sudden or gradual sinking of land, called ground settlement. Ground settlement may be caused by water removal or by gradual settlement of unconsolidated alluvial deposits or artificial fill. Earthquakes may also cause ground settlement because the sedimentary materials underlying Ferndale may contain layers of unconsolidated material, which could settle during strong seismic shaking. Ground settlement may lead to tilting of buildings or differential settlement of structures and has been a major source of property damage in other areas of the world. Geologic information is not sufficient to determine whether or not the alluvial areas of Ferndale would be subject to substantial ground settlement in the event of an earthquake. There is not a history of ground settlement occurring in the area, so the likelihood of this occurring is low.

Earthquakes can trigger a sudden mass downslope movement of material, called a slope failure or landslide. Landslides may also be triggered by other, non-seismic events or conditions, and are most common on steep natural or artificial slopes with high water content. Landslides may be rapid, as in a rock-fall or debris flow, or very slow and gradual, as in a creep. Cutting away the toe of slope in grading for site development or road construction may trigger slope failure, as might adding weight to an area by fill, construction, or water from very heavy rain. In general, continued modification of the topography by further cut and fill would increase the landslide potential in areas such as the hilly southern end of the Planning Area. A landslide may cause rocks to fall onto roadways, buildings, utilities, and other developments below the slope, potentially causing both physical harm and property damage. In general, slopes steeper than about 15 degrees are less stable and thus more prone to landslides. A

majority of the Planning Area is relatively flat and therefore not susceptible to landslides. However, the southern portion of the Planning Area contains steeper slopes with moderate instability (see Figure 4.8-3).

Figure 4.8-2: Potential Liquefaction for Planning Area

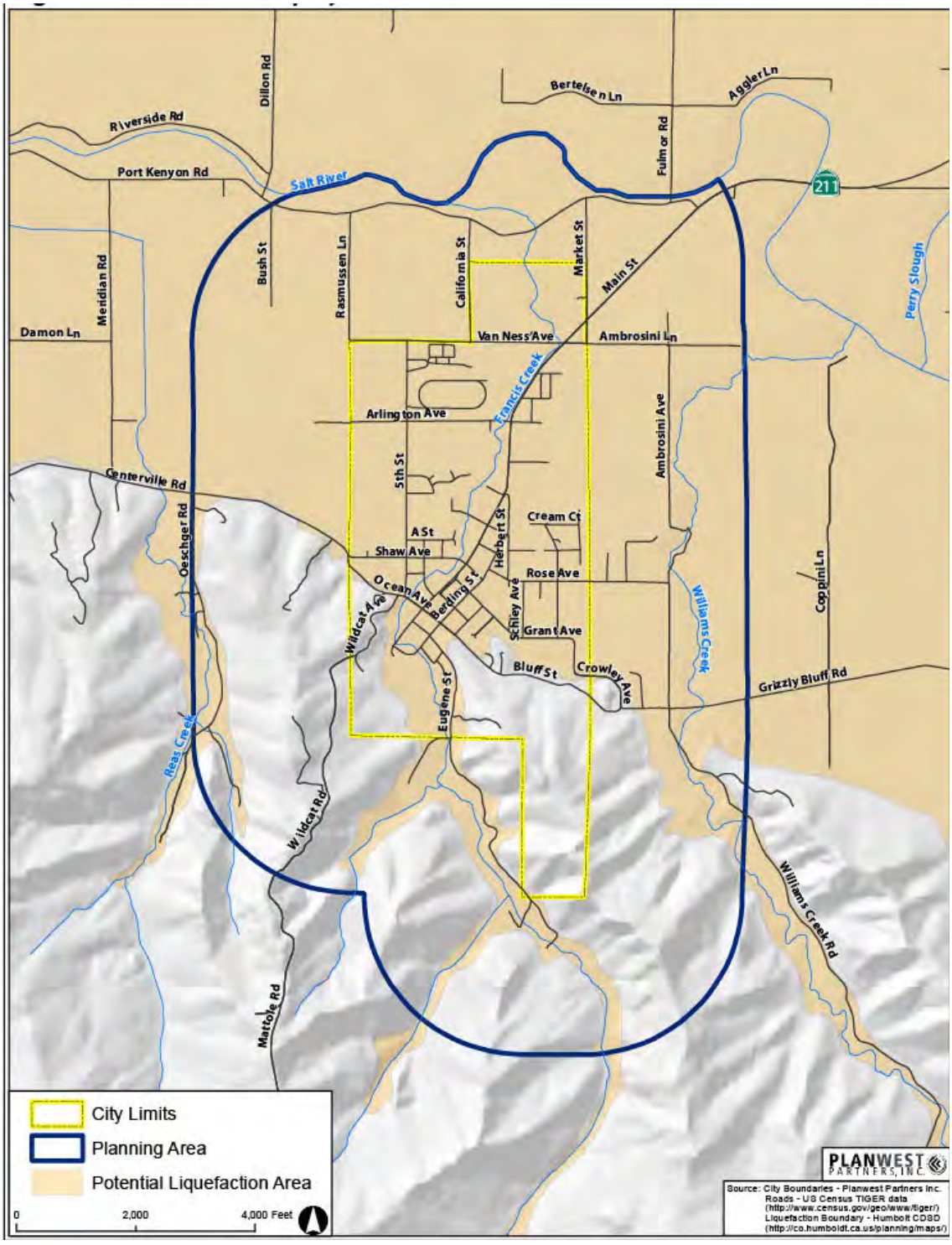
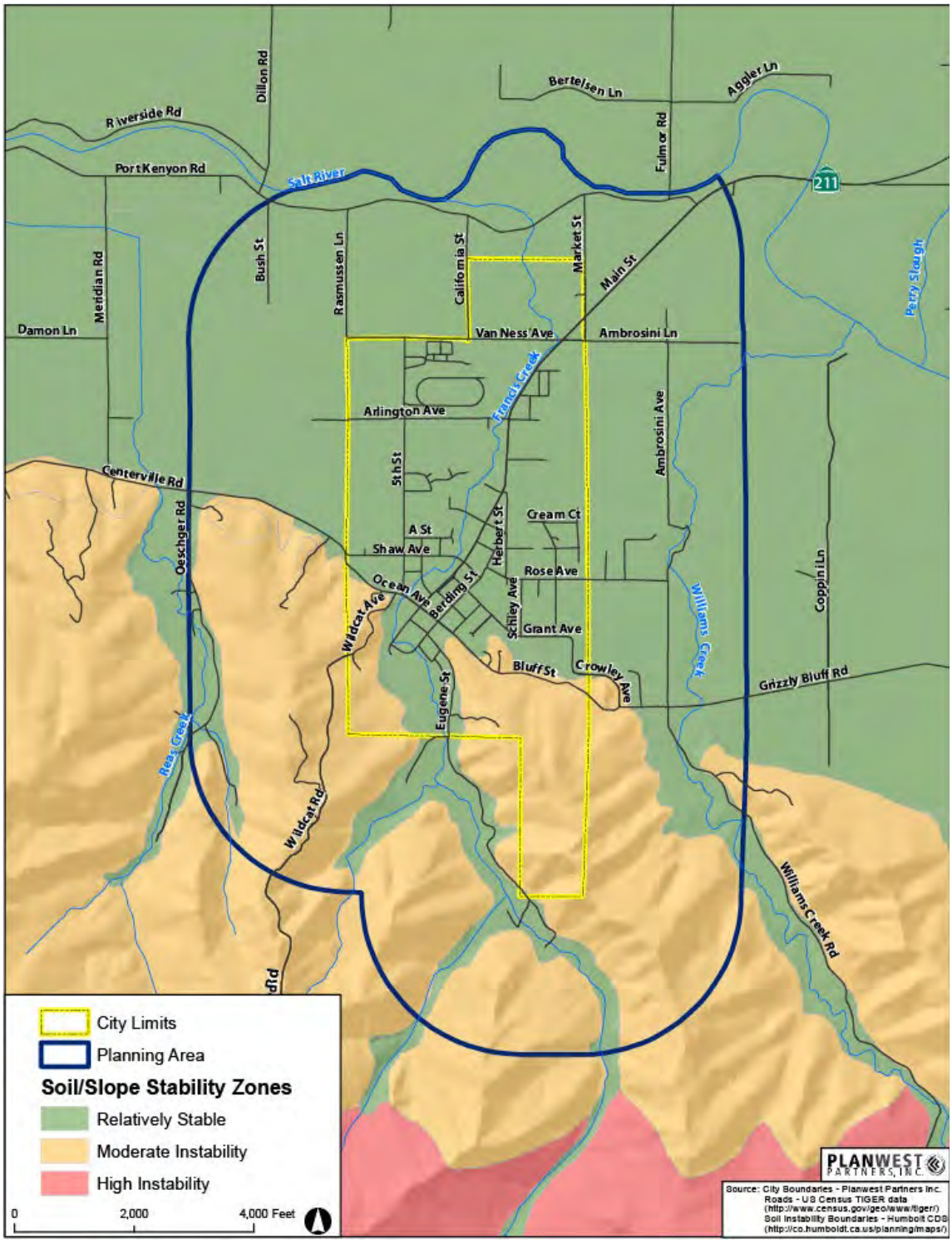


Figure 4.8-3: Soil/Slope Stability Zones

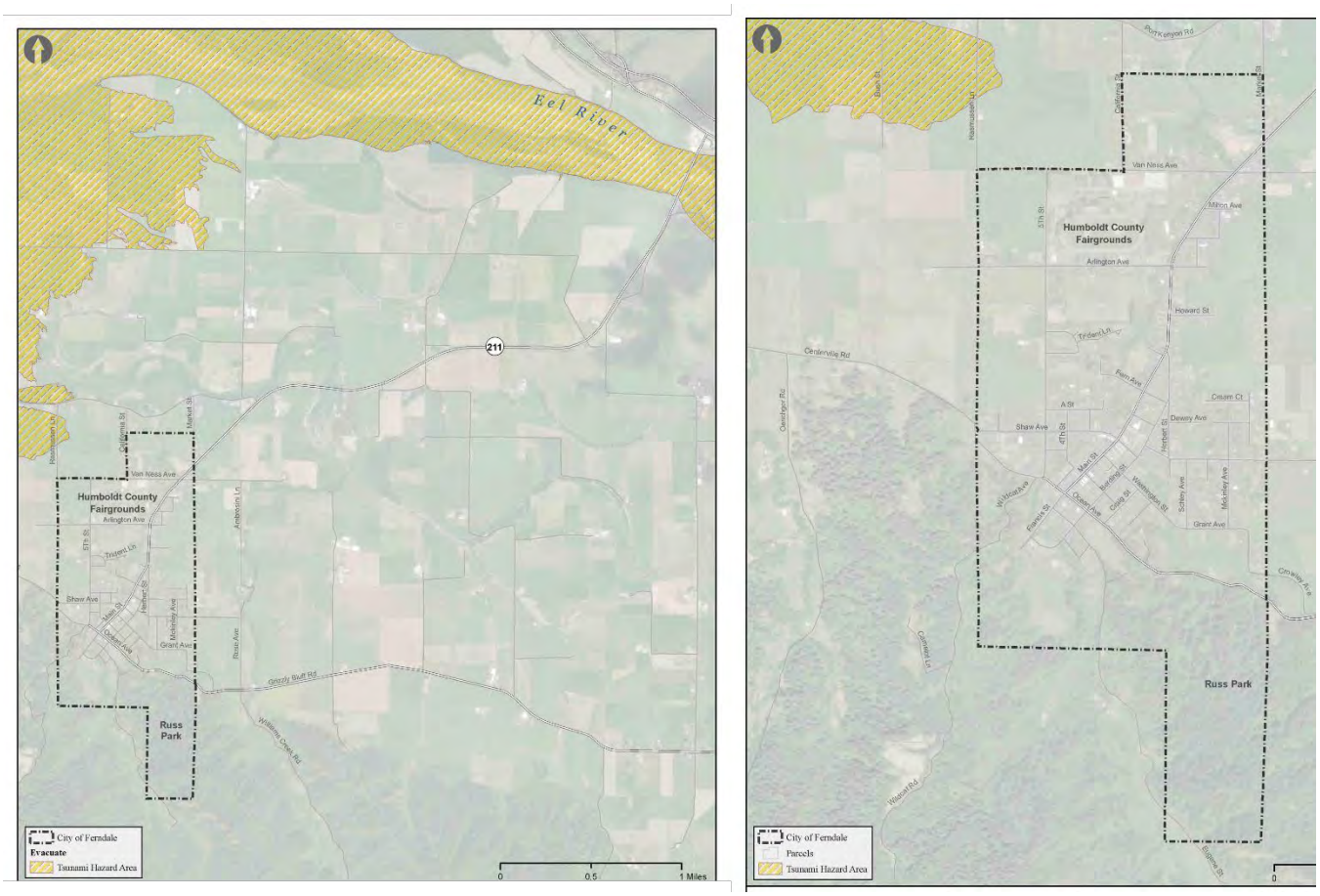


The oscillation produced by an earthquake may generate a wave, known as a seiche, within enclosed or restricted bodies of water such as lakes or reservoirs. There are no natural lakes or reservoirs within close enough proximity to the City of Ferndale to present a likely hazard. However, there are wastewater treatment ponds associated with processing the City's wastewater located on Port Kenyon Road on the lower Eel River basin, north of Ferndale

city limits. During wet weather periods with excess wastewater, there is a retention pond located adjacent to the treatment facility. Intense vibrations possess the capability to initiate shifts in the underlying earth beneath retention ponds, thereby posing a risk of detrimental effects on both the synthetic liner and the compacted soil layers that may lie beneath it. Such disturbances could lead to structural damage, compromising the integrity of the liner and the stability of the soil (Stantec, 2018; City of Ferndale, 2018).

A tsunami is a large sea wave generated by any large-scale disturbance of the ocean floor that occurs in a short period of time, such as an earthquake, volcanic eruption, or coastal landslide, which can cause a sudden displacement of water. Though local earthquakes may cause tsunamis, most past tsunamis in California were associated with distant earthquakes that traveled great distances across the Pacific Ocean basin. The northwestern portion of the Planning Area is located in a tsunami hazard and evacuation area (California Department of Conservation, 2024).

Figure 4.8-4: Tsunami Evacuation Zone in Planning Area



Soil Survey

Soils within the Eel River Basin are derived from weathering processes affecting geologic materials exposed at the ground surface. Soil development and distribution is generally influenced by the nature of the exposed geologic ("parent") material, as well as climatic, vegetative, and topographic factors. Regional groundwater aquifer recharge is directly affected by the soil characteristics that define permeability of the near surface materials. Areas with highly weathered, or clay-rich, soils are generally associated with low permeability, whereas unweathered granular soils are associated with high permeability. (Humboldt County Groundwater Sustainability Agency, 2022)

The Ferndale soils consist of medium textured very dark greyish brown soils of recent alluvial origin. The sediments are derived from greywhacke, shale, and sandstone of the Franciscan formation in the North Coast Range Mountains (UC Davis, 1965). Expansive soils shrink or swell with changes in moisture content (Science Direct, 2023). Clay mineralogy, clay content, and porosity of the soil influence the change in volume. The shrinking and swelling caused by expansive clay-rich soil can result in damage to overlying structures. The soil series dominant in the Project area does not contain a significant amount of clay content or minerology (Web Soil Survey , 2022).

Figure 4.8-5: Ferndale Predominant Soil Composition Map

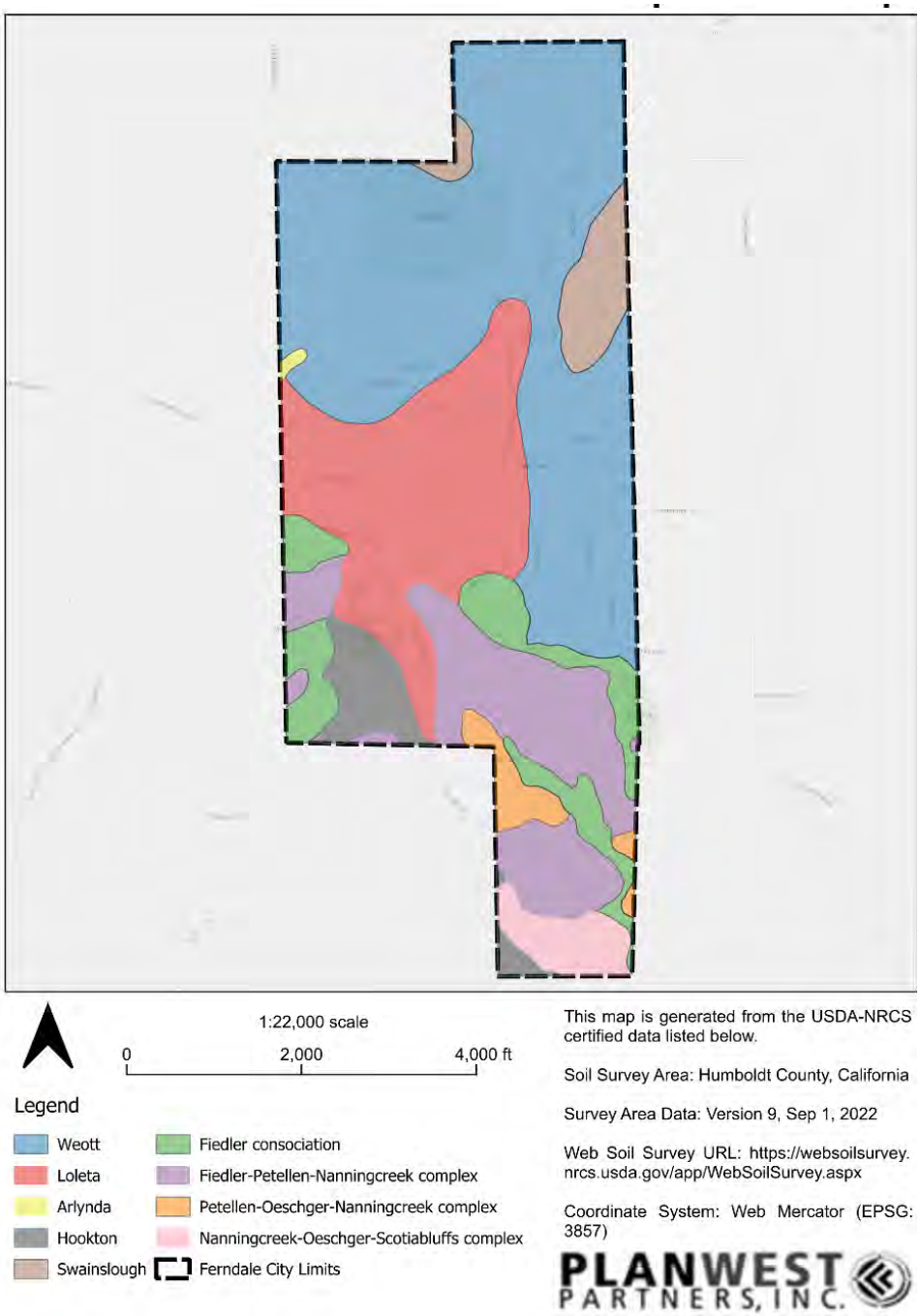


Table 4.8-1: Ferndale Predominant Soil Type Composition

Soil Series	Slope	Taxonomic Family	Acres in City	Approximate % of City Area
Weott	0-2 %	Fine-silty, mixed, superactive, nonacid, isomesic Fluvaquentic Endoaquepts	347.6	45.2%
Loleta	2-5%	Fine-loamy, mixed, superactive, isomesic Fluvaquentic Endoaquolls	157.5	20.5%
Fiedler-Petellen-Nanningcreek complex	30-50%, cool	Fine-loamy, mixed, active, isomesic Mollic Hapludalfs	107.7	14.0%
Fiedler-Petellen-Nanningcreek complex	30-50%, cool	Loamy-skeletal, mixed, superactive, isomesic Mollic Hapludalfs	107.7	14.0%
Fiedler-Petellen-Nanningcreek complex	30-50%, cool	Fine-loamy, mixed, superactive, isomesic Oxyaquic Hapludalfs	107.7	14.0%
Fiedler consociation	15-30%, cool	Fine-loamy, mixed, active, isomesic Mollic Hapludalfs	59.4	7.7%
Swainslough	0-2 %	Fine, mixed, superactive, nonacid, isomesic Fluvaquentic Endoaquepts	29.7	3.9%
Hookton	2-9%	Fine-loamy, mixed, superactive, acid, mesic Typic Humaquepts	28.6	3.7%
Nanningcreek-Oeschger-Scotiabluffs complex	50-75%, cool	Fine-loamy, mixed, superactive, isomesic Oxyaquic Hapludalfs	21.6	2.8%
Nanningcreek-Oeschger-Scotiabluffs complex	50-75%, cool	Coarse-loamy, mixed, superactive, isomesic Typic Dystrudepts	21.6	2.8%
Nanningcreek-Oeschger-Scotiabluffs complex	50-75%, cool	Coarse-loamy, isotic, isomesic Typic Dystrudepts	21.6	2.8%
Petellen-Oeschger-Nanningcreek complex	50-75%	Loamy-skeletal, mixed, superactive, isomesic Mollic Hapludalfs	15.8	2.1%
Petellen-Oeschger-Nanningcreek complex	50-75%	Coarse-loamy, mixed, superactive, isomesic Typic Dystrudepts	15.8	2.1%
Petellen-Oeschger-Nanningcreek complex	50-75%	Fine-loamy, mixed, active, isomesic Mollic Hapludalfs	15.8	2.1%

Arlynda	0-2 %	Fine-silty, mixed, superactive, nonacid, isomesic Fluvaquentic Endoaquepts	1.3	0.2%

Source: (Web Soil Survey , 2022; Soil Data Explorer, n.d., p. 2023)

REGULATORY SETTING

FEDERAL

U.S. Geological Survey Landslide Hazard Program

To fulfill the requirements of Public Law 106-113, USGS created the National Landslide Hazards Program to reduce long-term losses from landslide hazards by improving understanding of the causes of ground failure and suggesting mitigation strategies. The Federal Emergency Management Agency is the responsible agency for the long-term management of natural hazards.

STATE

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 and updates (California Public Resources Code [PRC], Section 2621, et seq.) is the principal California State guidance to prevent the construction of habitable structures on the surface trace of active earthquake faults. If an active fault is found, a structure for human occupancy must be set back from the fault (generally 50 ft). The Alquist-Priolo Earthquake Fault Zoning Act only addresses the hazard of surface fault rupture; it does not consider other earthquake hazards. There are no known earthquake fault zones on or in the near vicinity of the Project site; therefore, regulations recommended by the CGS for investigations conducted in such zones do not specifically apply.

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act (SHMA) was adopted by the State in 1990 to address the potential hazards posed by secondary effects of seismic activity, including strong ground shaking, soil liquefaction, and associated ground failure and seismically induced landslides. The CGS prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazard zones are referred to as “zones of required investigation” because site-specific geological investigations are required for construction projects located within these areas. Before a project can be permitted, a geologic investigation, evaluation, and written report must be prepared by a licensed geologist to demonstrate that the potential hazards can be successfully mitigated.

California Building Code

The California Code of Regulations (CCR), Title 24, Part 2, the California Building Code (CBC), provides minimum standards for building design in the State. Local codes are permitted to be more restrictive than Title 24, but not less restrictive. The procedures and limitations for the designs of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic design category. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8).

California Health and Safety Code

Sections 17922 and 17951–17958.7 of the California Health and Safety Code require cities and counties to adopt and enforce the current edition of the CBC, including a grading section. All construction permits for the City of Ferndale are required to conform to the current CBC.

New construction in Ferndale must also comply with the Uniform Building Code (UBC) Published by the International Conference of Building Officials as referenced by the California Department of Housing and Community Development and pursuant to the provisions of Section 17958, 17958.5, 17958.9 and 17959 of the California Health and Safety Code. The City adopted the UBC in 2016 with no major revisions, meaning that there are no extraordinary building regulations that would adversely affect the ability to construct housing in Ferndale.

The City has adopted these provisions by reference and also includes amendments to the CBC (Title 8, Chapter 8.02, Section 8.02.020 of the City's Municipal Code). Sections of Volume 2 of the CBC specifically apply to select geologic hazards. Chapter 16 of the 2016 CBC addresses requirements for seismic safety. Chapter 18 regulates excavation, foundations, and retaining walls. Chapter 33 contains specific requirements pertaining to site demolition, excavation, and construction.

Public Resources Code

Section 5097.5 of the Public Resources Code provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

Construction General Permit

Stormwater discharges from construction activities in California are regulated by the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-009-DWQ, NPDES No. CAS000002 (Construction General Permit). The Construction General Permit regulates construction activity that disturbs at least 1 ac of total land area. The Construction General Permit requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that describes the Erosion Control and Sediment Control Best Management Practices (BMPs) that would be implemented during construction to control erosion and sedimentation, particularly during storm events.

REGIONAL AND LOCAL

General Plan Safety Element

Goals and policies in the proposed Safety Element update relating to geology and soils include:

***Goal 1 – Geologic and Seismic Hazards**: Minimize the risk to public health and safety and loss of social, economic, and environmental welfare resulting from seismic and geologic activities.*

- *Policy 1.1 Update City zoning regulations to incorporate standards for seismic setbacks, structural requirements, and hillside development.*
- *Policy 1.2 Require geotechnical evaluation for development projects with the potential to expose people or property to geological hazards, such as landslides, slope failures or soil subsidence.*
- *Policy 1.3 In areas with identified geologic hazards, development shall conform to geotechnical report mitigation measures and/or project and site modifications to respond to site-specific hazards and conditions.*
- *Policy 1.4 Improve drainage, plant soil-stabilizing* non-*pyrophytic native vegetation, and provide structural reinforcements in landslide-prone areas, e.g., Bluff Street and Wildcat Road.*
- *Policy 1.5 Collect and maintain current geologic data to identify hazardous areas.*
- *Policy 1.6 Ensure that public facilities are structurally sound and able to withstand seismic shaking and the effects of seismically-induced ground failure.*

Drainage Master Plan

The Ferndale Drainage Master Plan Update is a long-range planning tool that identifies deficiencies in the existing drainage system, provides a recommended course of action to reduce flood damage, supports the drainage fee ordinance, establishes a fee schedule for development, and provides guidance for the development of future drainage facilities. The 2022 update builds on information provided in the 2004 update and utilizes the most current methodology available in order to assess flow patterns throughout the City.

Municipal Ordinances

Under Building Inspector / Construction Code Ordinance 2011-01, the City of Ferndale incorporated by reference and adopted as its Building Standards and Regulations applicable to all occupancies in the City of Ferndale each and all of the terms, conditions, regulations, penalties, and provisions of several codes (including the CBC and UBC previously described above) which are from time to time adopted, amended, added, and deleted by regulation of the California State Building Standards Commission.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to geology and soil from implementation of the Project would be significant if it would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; Refer to Division of Mines and Geology Special Publication 42.
    ii) Strong seismic ground shaking;
    iii) Seismic-related ground failure (including liquefaction);
    iv) Landslides;
b) Result in substantial soil erosion or the loss of topsoil;
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water; or
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

To assess the impacts of the proposed Project with respect to geologic and soil conditions, background research and data review was performed. Various sources, including published geologic maps and data pertinent to the subject site were acquired and reviewed. A Custom Soil Resource Report for Ferndale was generated from National Cooperative Soil Survey data and maps were generated using USGS data.

PROJECT IMPACTS AND MITIGATION

Impact GEO-01: Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving i) rupture of a known earthquake fault, ii) strong seismic ground shaking, iii) seismic-related ground failure (including liquefaction), or iv) landslides?

Finding GEO-01: The Project will allow for increased building density in several areas throughout the City. Since the Planning Area is located within a seismically active region and the majority of the area has been mapped as a potential liquefaction zone, there is potential for adverse effects from ground shaking, ground failure, and/or landslides. However, with incorporation of existing and proposed policies impacts would be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-2	• Policy LU-2.3 – Existing Buildings and Sites • Policy LU-2.6 –Existing Commercial Areas Revitalization
Safety Element	Goal 1 – Geologic and Seismic Hazards	• Policy 1.1-1.6 • Implementation Program 1.a-1.g
Safety Element	Goal 5 – Acceptable Risk	• Policy 5.1-5.6 • Implementation Program 5.a
Safety Element	Goal 6 – Emergency Preparedness	• Policy 6.1-6.5 • Policy 6.7-6.9 • Implementation Program 6.a-6.0

i) rupture of a known earthquake fault (as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault)

There are no current fault lines in the Project area or immediate vicinity that are in the Alquist-Priolo Earthquake Zoning Map. The potential direct or indirect adverse effects from rupture of an earthquake fault would be less than significant.

ii) strong seismic ground shaking

The Project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. Given the proximity of significant active faults (the Little Salmon fault and the Cascadia subduction zone offshore to the west), as well as other active faults within and offshore of northern California, the study area could experience strong ground shaking during the planning horizon.

Buildings and infrastructure within and in close proximity to the active fault already exist and are used daily. However, implementation of the Project through construction of new or renovated building structures and infrastructure could increase the risk of strong seismic ground shaking or exposure to strong seismic ground shaking above existing conditions. The proposed Safety Element policies aim to minimize geologic and seismic hazards and directly addressed this with Policies 1.1-1.5, 6.1 and Program 1.a-d, 1.g, 6.a. These policies include updating zoning regulations, requiring geotechnical evaluations for development projects, ensuring adherence to

mitigation measures in hazardous areas, improving drainage and soil stabilization, collecting and maintaining geologic data, and ensuring structural integrity of public facilities. The Policies are supported by implementation programs such as geologic investigations for slope projects, prohibiting development on excessively steep hillsides, enforcing building code requirements, reviewing critical structures for seismic vulnerability, monitoring new building materials for earthquake stability, and adopting the Uniform Code for the Abatement of Dangerous Buildings. Policy 1.1 focuses on updating regulations for seismic setbacks and hillside development standards helps ensure structures are built to withstand seismic events and minimize landslide risks. Policies 1.2, 1.3, 1.5 & Program 1.a addresses potential geotechnical hazards by requiring geotechnical evaluations for development projects in hazard-prone areas helps identify and mitigate landslide and slope instability risks. Policy 1.4 & Program 1.c improve drainage and slope stability by stabilizing soil with vegetation, and implementing structural reinforcements in landslide-prone areas help mitigate landslide and downstream flooding risks. Additionally, Program 7.d would "develop and implement consolidated emergency response programs and plans for fire, flooding, seismic and other potential hazard events contained in the City's EOP. Distribute the plans to City departments, emergency response providers and support groups".

Proposed policies and programs would reduce potential risks by developing effective emergency response and recovery plans and informing City residents, businesses and agencies, about these plans, the requirement for review of seismic hazards, and incorporation of measures from geotechnical reports. With inclusion of these policies, new development and substantial renovations would have to consider seismicity, include geotechnical measures to reduce risk, demonstrate that proposed facilities would be designed to withstand the potential risk of liquefaction, and require the community to have response plans. The study area is located in a seismically active area and it is not possible to eliminate the risk of strong seismic ground shaking; however, new development will be constructed to incorporate the most current and effective seismic engineering measures to strengthen building foundations and the City will provide emergency response plans and standards for community safety. With inclusion of the policies mentioned above, a less than significant impact would occur from implementation of the Project.

iii) seismic-related ground failure, including liquefaction

The City of Ferndale is situated on alluvial plains which may be susceptible to liquefaction (Humboldt County Planning Department, 2015). Some soils in the Planning Area may be subject to liquefaction as a result of seismic activity. Liquefaction occurs when earthquakes cause soils to become almost like quicksand and lose their ability to support structures. Fine unconsolidated sand or silt saturated with water is particularly subject to liquefaction; Ferndale's location on an alluvial plain means it may be underlain by layers of such materials and thus subject to potential liquefaction during a strong earthquake. Liquefaction may result in sinking, tilt, distortion, or destruction of buildings and bridges, rupture of underground utility lines, and ground surface cracking and spreading. A majority of the Planning Area is located in a potential liquefaction area (see Figure 4.8-2). However, as described above in impact (i) and (ii), policies and programs of the proposed Project exist to reduce and minimize potential impacts associated with liquefaction. Additionally, all new development in the study area would have to comply with the California Building Code, which requires stringent earthquake-resistant design parameters and common engineering practices requiring special design and construction methods that minimize potential liquefaction or expansive soil-related impacts.

With inclusion of standard California Building Code practices and proposed policies, implementation of the Project would not increase the risk of liquefaction or exposure to liquefaction above existing conditions and a less than significant impact would occur.

iv) landslides

The study area is predominantly flat, with hillsides located in the southern portions of the city, starting around Bluff Street/Ocean Ave, and in the Planning Area south of the city limits. New development on hillsides has the potential to result in the disturbance of soils and a resulting landslide. However, Policy 1.4 & Program 1.c improve drainage and slope stability by stabilizing soil with vegetation, and implementing structural reinforcements in landslide-prone areas help mitigate landslide risks. Potential occurrences of landslides are not anticipated above existing conditions. No impact relating to landslides is anticipated.

MITIGATION MEASURE

No mitigation measures would be required.

Impact GEO-02: Would the Project result in substantial soil erosion or the loss of topsoil?

Finding GEO-02: No substantial soil erosion or loss of topsoil would result from development occurring under the proposed General Plan Elements. As such, a less than significant impact will occur.

Land Use and Safety Element policies and programs incorporate drainage improvements, riparian corridor maintenance, and stream setback standards to help manage stormwater runoff effectively, reduce erosion, and preserve natural habitats. The following Land Use and Safety Element goals, policies, and programs relate to soil erosion and/or the loss of topsoil:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.7 – Planned Development • Policy LU-1.8 – Multi-Modal Transportation • Policy LU-1.9 – Right-of-Way • Policy LU-1.10 – Community Space
Land Use Element	Goal LU-3	• Policy LU-3.2 – Improve Drainage • Policy LU-3.3 – Manage Flood Plain • Policy LU-3.4 – Francis Creek Corridor • Policy LU-3.5 – Forest Lands Preservation • Policy LU-3.6 – Funding
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Implementation Program	• LU-IP2: Zoning Code Updates • LU-IP3: Planned Development Designation • LU-IP4: Drainage Infrastructure Funding • LU-IP5: Drainage Master Plan Priorities • LU-IP6: Stream Set Back Standards • LU-IP7: Open Space Action Program
Safety Element	Goal 1 – Geologic and Seismic Hazards	• Policy 1.1-1.4 • Implementation Program 1.a-1.c
Safety Element	Goal 2 – Flood Protection	• Policy 2.2-2.5 • Policy 2.7-2.9 • Implementation Program 2.c-2.o
Safety Element	Goal 5 – Acceptable Risk	• Implementation Program 5.a

Any new construction activities associated with implementation of the Land Use Element and Safety Element could potentially disturb soil by removing vegetation, cutting slopes, grading, digging, moving and filling ground material, and moving heavy equipment. These construction activities would be performed in compliance with the Best Management Practices prescribed in the Municipal Code, North Coast Regional Water Quality Control Board regulations and the California Building Code. Best Management Practices may include silt fences, straw wattles, soil stabilization controls, site watering for controlling dust, and sediment detention basins. Therefore, no substantial soil erosion or loss of topsoil would result from development occurring under the proposed Project, and the potential impact would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact GEO-03: Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Finding GEO-03: With inclusion of standard California Building Code practices and the proposed policies the Project would not result in any substantial ground disturbing activities that would result in landslides, lateral spreading, subsidence, liquefaction, or collapse. Project impacts are expected to be less than significant.

The following Land Use and Safety Element goals, policies, and programs relate to soil stability and/or potential earth movement events:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.7 – Planned Development
Safety Element	Goal LU-4	• Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control • Policy LU-4.3 – Agricultural Use Preservation
Safety Element	Implementation Program	• LU-IP3: Planned Development Designation
Safety Element	Goal 1 – Geologic and Seismic Hazards	• Policy 1.1-1.6 • Implementation Program 1.a-1.g
Safety Element	Goal 5 – Acceptable Risk	• Policy 5.1-5.6 • Implementation Program 5.a
Safety Element	Goal 6 – Emergency Preparedness	• Policy 6.1 • Policy 6.3-6.5 • Policy 6.7-6.9 • Implementation Program 6.a-6.o

The Safety Element directly addresses seismic hazards such as landslides. Policy 1.4 specifically focuses on improving drainage, planting soil-stabilizing vegetation, and providing structural reinforcements in landslide-prone areas, reducing the likelihood of landslides exacerbating wildfire spread. Program 1.a mandates geologic investigations for projects on steep slopes, guiding measures to minimize hazards and prevent uncontrolled wildfire spread. Program 1.b prohibits development on excessively steep hillsides, mitigating the risk of rapid wildfire spread in high-risk areas. Program 1.c implements mitigation actions for slope stability in landslide areas, including vegetation planting and landslide repair, reducing the risk of landslides triggering wildfires.

The adoption of the proposed Land Use Element and Safety Element would not in itself result in projects that would be located on a geologic unit or soils that are unstable or expansive, creating substantial risk to life or property. By adhering to the standards of the California Building Code impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact GEO-04: Would the Project be located on expansive soil creating substantial direct or indirect risks to life or property?

Finding GEO-04: There are no expansive soils within the planning area that would create a substantial direct or indirect risk to life or property. As such, there will be no impact.

As described in the setting section above under Soil Survey, there are no expansive soils within the planning area that would create a substantial direct or indirect risk to life or property. Therefore, the adoption of the proposed Land Use Element and Safety Element would not in itself result in projects that would be located on a geologic unit or soils that are unstable or expansive, no impact is anticipated.

MITIGATION MEASURE

No mitigation measures would be required.

Impact GEO-05: Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Finding GEO-05: Development under the Land Use Element would continue to be connected to the City's wastewater disposal system. As such, there will be no impact.

Development under the proposed Land Use Element would continue to be connected to the City's wastewater treatment system and would not require the use of additional septic tanks or an alternative wastewater disposal system. Per the City's Sewer Ordinance, all buildings abutting a street with sewer lines are required to connect to the system. There would be no impact.

MITIGATION MEASURE

No mitigation measures would be required.

Impact GEO-06: Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Finding GEO-06: There are no known unique paleontological or geologic features in the Project area. As such, there will be no impact.

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata, are non-renewable and scarce and are a sensitive resource afforded protection under environmental legislation in California. There are no known unique paleontological resources, sites, or unique geologic features in the Project area. In addition, the Land Use Element and Safety Element do not propose any site-specific modifications and development is predominately proposed in areas that have been previously disturbed. Although the Land Use Element encourages development, there are no unique features located within the Project site and it is unlikely that paleontological resources would be discovered. As such, there will be no impacts to any unique paleontological resource or site, or unique geologic feature.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Alexander, S. (2023, March 7). Caltrans explains upcoming Fernbridge closures, repairs. *Time Standard*.

Burns, R. (2023, February 24). The Future of Quake-Damaged Fernbridge is Uncertain; New Bridge May Need to Be Built, Caltrans Says. *Lost Coast Outpost*.

California Department of Conservation. (2024). *California Tsunami Maps*. Retrieved from https://maps.conservation.ca.gov/cgs/informationwarehouse/ts_evacuation/

California Earthquake Hazards Zone Application . (2021, September 23). Retrieved from California Department of Conservation: https://maps.conservation.ca.gov/cgs/EQZApp/app/

California Earthquake Risk Map & Faults Humboldt. (2023). Retrieved from California Earthquake Authority: https://www.earthquakeauthority.com/California-Earthquake-Risk/Faults-By-County

Christensen, A. (2011, April). *The April 1992 Mendocino Triple Junction Earthquakes*. Retrieved from Chronicling the Nisqually Earthquake and Other Northwest Quakes: https://nisquallyquake.wordpress.com/2011/04/01/the-april-1992-mendocino-triple-junction-earthquakes/

City of Ferndale. (2018). *Waste Discharge Requirement and Water Recycling Requirements*. Retrieved from North Coast Regional Water Quality Control Board: https://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2018/18_0046_Ferndale_NPDES.pdf

Dengler, L. (2008, April). *The 1906 Earthquake on California's North Coast.* Retrieved from Research Gate: https://www.researchgate.net/publication/250074905_The_1906_Earthquake_on_California%27s_North_Coast

HCAOG. (2014). *Humboldt Regional Transportation Plan – 2013/14 Update Draft EIR 4.4 Geology and Soils.* Retrieved from HCAOG: https://www.hcaog.net/sites/default/files/rtp_deir_4.4_geology_and_soils_0512.pdf

Humboldt County. (2012). *Humboldt County General Plan.* Humboldt County.

Humboldt County Groundwater Sustainability Agency. (2022). *Eel River Valley Groundwater Sustainability Plan.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/103631/ERVB-GSP-final-1-29-2022

Humboldt County Planning Department. (2015). *Liquefaction Hazard Zones: Humboldt County, California.*

Humboldt LAFCO. (2018). *City of Ferndale Municipal Service Review.* Humboldt LAFCO.

Magnitude 6.4 Earthquale near Ferndale, California. (2022, December 20). Retrieved from USGS: https://www.usgs.gov/news/featured-story/magnitude-64-earthquake-near-ferndale-california

NOAA. (1992, April). *Ferndale's Valley Grocery lost brick facade smashing two cars.* Retrieved from Natural Hazards Image Database: https://www.ngdc.noaa.gov/hazardimages/#/earthquake/16/image/336

Pinedo, J. (2023, May 12). What triggers an earthquake and how are they measured? A California physicist answers. *The Sacramento Bee*.

Science Direct. (2023). *https://www.sciencedirect.com/science/article/abs/pii/B9780128176863000049*. Retrieved from Science Direct: https://www.sciencedirect.com/topics/engineering/expansive-soil

SHN Consulting Engineers & Geologists, Inc. (2016). *Groundwater Sustainability Plan Alternative Report.* Eureka, CA: County of Humboldt.

Soil Data Explorer. (n.d.). Retrieved from National Cooperative Soil Survey: https://casoilresource.lawr.ucdavis.edu/sde

Stantec. (2018, October 5). *Seismic Impact Zones Stilling Pond (Including Retention Pond)*. Retrieved from Tennessee Valley Authority: https://www.tva.com/docs/default-source/ccr/cuf/surface-impoundment---stilling-pond-(including-retention-pond)/location-restrictions/seismic-impact-zones/257-63_seismic-impact-zones_cuf_stilling-pond-(including-retention-pond).pdf?sfvrsn=bbae2408_2

UC Davis. (1965). *Soils of Western Humboldt County.* Davis.

Web Soil Survey . (2022, September). Retrieved from USDA NRCS: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

4.9 GREENHOUSE GAS EMISSIONS

This section includes a description of the current information on Greenhouse Gas (GHG) emissions, the expected regional impacts of climate change, a summary of applicable federal and state standards, local GHG emissions profiles and planning efforts, and an analysis of the potential GHG emissions impacts associated with the Ferndale General Plan Land Use and Safety Element Updates.

ENVIRONMENTAL SETTING

The City of Ferndale is located in Humboldt County, California on planet Earth. Global observations provide unequivocal evidence that the earth's climate system is changing as a result of greenhouse gas emissions (GHGs). GHGs trap heat in the Earth's atmosphere and play a critical role in maintaining the Earth's surface temperature and livable human habitat. This phenomenon is known as the greenhouse effect. Human activity has caused increased concentrations of GHGs in the atmosphere, thereby contributing to an increase in average global temperatures that is commonly referred to as global climate change. Global climate change refers to a change in the average weather patterns of the earth that is measured by the frequency and intensity of storms, precipitation, and temperatures.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. The following are the principal GHG pollutants that contribute to climate change and their primary sources:

► **Carbon Dioxide (CO_2)**: Carbon dioxide is constantly being exchanged among the atmosphere, ocean, and land surface as it is both produced and absorbed by many microorganisms, plants, and animals. Natural sources of CO_2 include decomposition of organic matter, and respiration of animals, plants, fungus, and bacteria, wildfires, and volcanic activity. Anthropogenic sources primarily include fossil fuel energy use in the form of burning of coal, oil, natural gas and wood fuel use. CO_2 is also released as a byproduct of chemical reactions in the production of cement.

► **Methane (CH_4)**: Methane is produced when organic matter decomposes under conditions where little or no oxygen exists. Methane is naturally occurring in wetlands, ponds, and lakes. Anthropogenic sources of methane emissions include extraction, processing, storage, transmission, and distribution of natural gas; extraction, refining, transportation, and storage of oil, and coal mining. Anthropogenic sources of methane also include domestic livestock digestive processes, agricultural manure management, the decomposition of organic waste in landfills and wastewater treatment. Smaller sources of methane emissions include wildfires, biomass burning, permafrost, termites, dams, and the ocean.

► **Nitrous Oxide (N_2O)**: Nitrous oxide emissions occur naturally through many sources associated with the natural circulation of nitrogen among the atmosphere, plants, animals, and microorganisms that live in soil and water. Natural emissions of N_2O are mainly from bacteria breaking down nitrogen in soils and the oceans. Nitrous oxide can result from various agricultural soil management activities, such as application of synthetic and organic fertilizers, manure management, and burning crop residues. Primary anthropogenic sources of nitrous oxide are agricultural soil management, wastewater treatment, combustion of fossil fuels, and industrial processes.

► **Fluorinated Gases**: Unlike many other greenhouse gases, fluorinated gases have no significant natural sources and come almost entirely from human-related activities. There are four main categories of fluorinated gases—hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). Fluorinated gases are emitted through the use of refrigerants and solvents, their

use in industrial processes such as aluminum and semiconductor manufacturing and use in electric transmission equipment. Fluorinated gases are potent GHGs as they have a very high global warming potential relative to other greenhouse gases, and last for a long time in the atmosphere - in some cases thousands of years.

Each greenhouse gas has a specific global warming potential, which is measured according to two major factors: How effective the gas is at trapping heat while in the atmosphere, and how long it remains there before breaking down. For instance, CO2 is mostly released by burning fossil fuels, trees, or organic waste. Although CO2 is not extremely powerful at absorbing heat, it takes thousands of years to dissolve once in the atmosphere. Methane, on the other hand, is mainly released through agriculture and the decomposition of landfill waste. It accounts for at least 25 percent of global warming so far, and although it only stays in the atmosphere for around a decade, it absorbs 28 times more heat than CO2 on a 100-year timescale. To assist in the discussion of GHG emissions, many use the term "CO2 equivalent" emissions (abbreviated as CO2e) to account for the differences between the various types of GHG gasses.

Historically, the rate of the Earth's temperature change has been incremental, with warming and cooling cycles occurring over thousands of years. However, over the past 150 years, scientists have observed an unprecedented increase in the rate of warming roughly coinciding with the global industrial revolution and the associated release of GHG emissions to the earth's atmosphere.

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. The IPCC prepares periodic comprehensive Assessment Reports about the state of scientific knowledge on climate change.

The key findings of the IPCC 6th Assessment Report include the following:

- Human activities, principally through emissions of GHGs, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 levels in the last decade (2011-2020).
    - Human-caused climate change is already affecting many weather and climate extremes in every region across the globe.
- Continued greenhouse gas emissions will lead to increasing global warming.
    - Every degree increase in global temperatures will intensify multiple and climate hazards concurrently.
- Deep, rapid, and sustained reductions in GHG emissions would lead to a slowdown in global warming within around two decades and deliver many co-benefits, especially for air quality and health.
    - There is a rapidly closing window of opportunity to secure a livable and sustainable future for all.
    - The choices and actions implemented in this decade will have impacts now and for thousands of years.
- With increasing global warming, losses and damage for humans and ecosystems will increase and human and natural systems will reach adaptation limits.
- Limiting human-caused global warming requires net zero CO_2 emissions.
    - This can be achieved by flexible, multi-sectoral, long-term planning and implementation of adaptation actions.

Humboldt County and Ferndale are subject to the local impacts of a changing global climate, and as such share a responsibility to develop and implement policies that promote local adaptation and mitigation of the most

significant climate change risks. While many impacts of climate change may be felt to some extent in Ferndale, of particular concern are sea level rise, flooding, coastal erosion, habitat modification, and water supply.

According to California's Fourth Climate Change Assessment Report, the expected impacts of global climate change for the North Coast Region include:

- Average annual maximum temperatures are likely to increase by 5-9 °F by the end of the 21st century.
- Annual precipitation is not expected to change significantly but will likely be delivered in more intense storms and within a shorter wet season.
    - As a result, the region is expected to experience prolonged dry seasons and reduced soil moisture conditions, even if annual precipitation stays the same.
- An "average" rainfall year will become less common, and a rise in extreme precipitation events will increase the frequency and extent of flooding in low-lying areas, particularly along the coast where food risk will be enhanced with rising sea levels.
- Less precipitation will fall as snow and snowpack will be a small fraction of its historical average.
- The sea level along California's coasts is projected to rise by as much as 20 to 55 inches by the end of the century.
- The highest rate of local sea level rise in California is expected in the Humboldt Bay region and Eel River delta.
    - Sea level rise in these areas presents a threat to communities, prime agricultural land, critical infrastructure, and wildlife habitat.
- Future wildfire projections suggest a longer fire season, an increase in wildfire frequency, and an expansion of the area susceptible to wildfire.

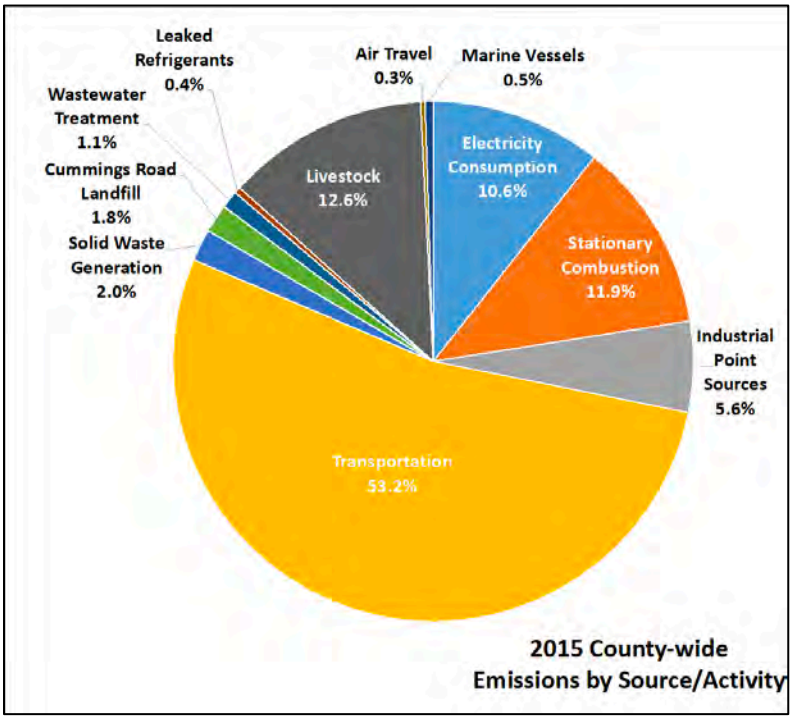
LOCAL EMISSIONS

The 2022 Draft Humboldt Regional Climate Action Plan (draft CAP) is a collaborative regional effort between Humboldt County, all the cities in the County, and the Redwood Coast Energy Authority (RCEA). While the CAP has not yet been formally adopted, it has been accepted as a public review draft by all the local agencies. It includes a 2015 GHG Emissions Inventory that shows the sources of local GHG emissions and provides the best information available. Figure 4.9-1, taken from the draft CAP, shows the total 2015 County-wide GHG emissions broken down by source.

Four categories of GHG emissions are responsible for the vast majority (83 percent) of emissions in the County: transportation, livestock, stationary combustion (e.g., residential/commercial heating and cooking), and electricity consumption.

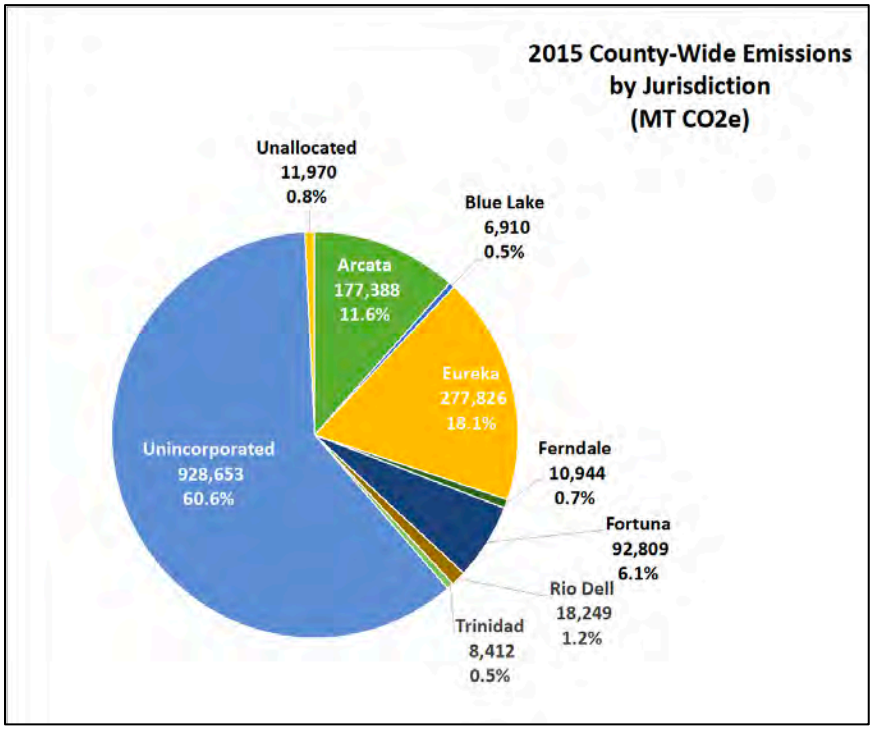
The draft CAP inventory analysis also shows the breakdown of 2015 GHG emissions by jurisdiction. Ferndale's estimated portion of County-wide GHG emissions is small – just 0.7 percent as shown in Figure 4.9-2.

Figure 4.9-1: Humboldt County GHG Emissions Sources



Source: Humboldt Regional Climate Action Plan; Public Review Draft (2022).

Figure 4.9-2: Humboldt County 2015 GHG Emissions By Jurisdiction



Source: Humboldt Regional Climate Action Plan; Public Review Draft (2022).

The GHG emissions for each jurisdiction generally correspond to its share of the region's population. Most local drivers of emissions, including transportation and home energy consumption, are closely correlated to population size. The GHG emissions from livestock are an exception to this trend, as the vast majority of dairy and cattle operations are located in unincorporated areas.

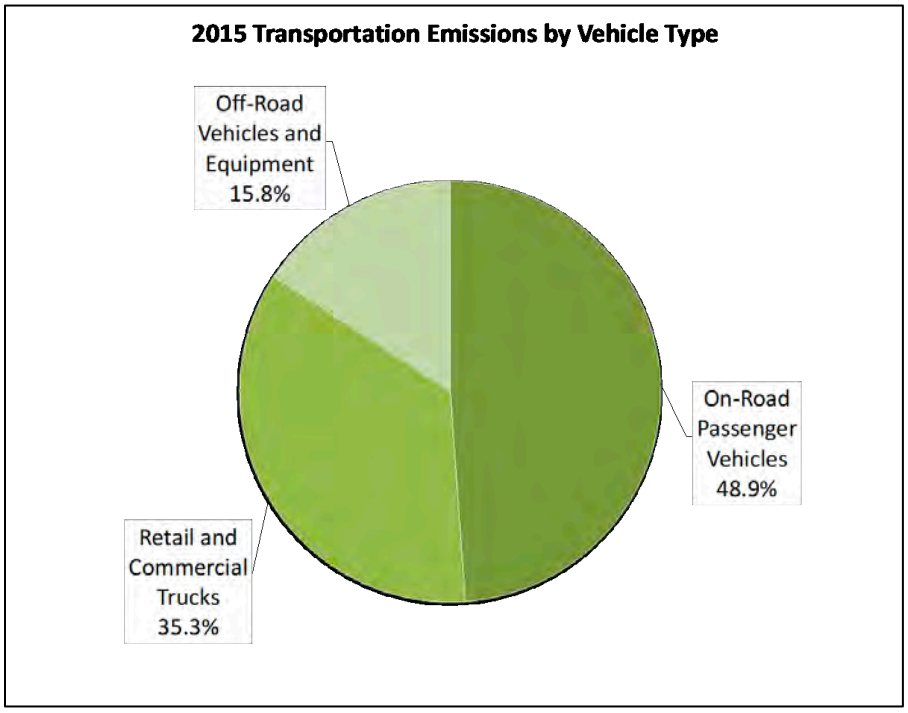
Key Sources of GHG emissions in Ferndale and Humboldt County include:

TRANSPORTATION

Transportation activities are the largest source of GHG emissions in Humboldt County (53.2 percent). Transportation GHG emissions are associated with vehicles and mobile equipment. This includes passenger vehicles, freight and service trucks, off-road vehicles, and construction equipment. GHGs like CO_2 are a byproduct of fuel combustion within a vehicle's engine.

The draft CAP GHG inventory for the Transportation sector shows that on-road passenger vehicles were the largest source of transportation-related GHG emissions in the County in 2015. Humboldt County is similar to other rural counties in this way where people often drive their cars long distances to get from their homes to businesses and other destinations.

Figure 4.9-3: Humboldt County 2015 GHG Emissions from Transportation By Vehicle Type.



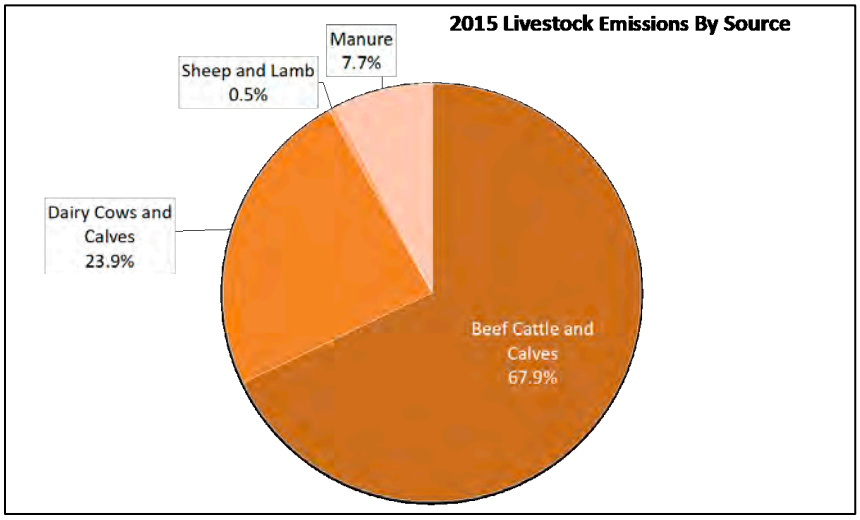
Source: Humboldt Regional Climate Action Plan; Public Review Draft (2022).

Vehicle Miles Traveled or VMT is used to estimate the use of fossil fuels and GHG emissions associated with transportation activities. A review of historic and current VMT data show that Humboldt County VMT has been declining over time. Currently, the annual VMT for the City of Ferndale is estimated to be 15,981,721 miles per year generating approximately 6,459 Metric Tons of CO_2 equivalent/year ($MTCO_2e$/year) in GHG emissions. See the Transportation Impacts section for more detail on that subject.

LIVESTOCK

According to the 2015 inventory data, raising livestock for beef and dairy products is also a large source of GHG emissions in Humboldt County (12.6 percent). The digestion process of ruminant animals like cows and sheep produces methane. The draft CAP describes the GHG emissions from raising livestock, "In the 2015 inventory, 73% of total livestock emissions are attributed to beef cattle. Dairy cows produce more methane per cow than beef cattle; however, in 2015 there were nearly four times as many beef cattle in Humboldt County than dairy cows." Figure 4.9-4 details the GHG emissions from livestock.

Figure 4.9-4: Humboldt County 2015 Greenhouse Gas Emissions From Livestock.



Source: Humboldt Regional Climate Action Plan; Public Review Draft (2022).

STATIONARY COMBUSTION

Stationary combustion also makes up a large share of GHG emissions (11.9 percent). Stationary combustion refers to the on-site use of propane and wood use in residential and commercial buildings. A 2013 Energy Assurance Plan prepared by the Redwood Coast Energy Authority (RCEA) found that "Ferndale consumes wood and propane in the residential sector, primarily for heating and cooking. On average, there are approximately 100 households using a total of approximately 250 cords of wood per year. About half that number of households use propane gas for an average total of nearly 50,000 gallons per year." This level of propane use generates an estimated 288 $MTCO_2e$/ year GHG emissions. CO_2 emissions from wood combustion are not currently considered sources of GHG emissions in this EIR as the CO_2 emitted from wood combustion was absorbed from the atmosphere and is part of the short-term carbon cycle.

ELECTRICITY CONSUMPTION

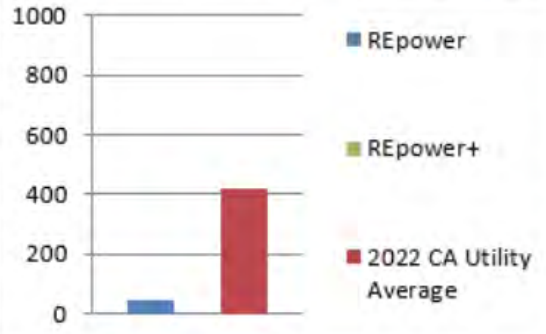
According to the draft CAP, electricity consumption is the fourth largest source of GHG emissions in Humboldt County (10.6 percent). GHG emissions associated with electricity used in Humboldt County are largely from burning fossil fuels in power plants both in and outside of the County. Power Content Labels provide details on the mix of energy resources used to produce the electricity supplied in Humboldt County including the City of Ferndale. Humboldt County's 2022 electricity mix is shown in Figure 4.9-5 below. It compares the GHG emissions for Humboldt County's electricity sources for RCEA's default program (REpower), the 100 percent renewable energy program (REpower+) and the statewide utility average. It shows that in 2022 Humboldt County's electricity

from the Repower program produced 89 percent fewer GHG emissions (49 lbs CO_2e/MWh) than the statewide utility average (422 lbs CO_2e/MWh).

Figure 4.9-5: Humboldt County GHG Emissions for Each Kilowatt-Hour of Grid Electricity in 2022

2022 POWER CONTENT LABEL
Redwood Coast Energy Authority
Redwoodenergy.org

Greenhouse Gas Emissions Intensity (lbs CO_2e/MWh)		
REpower	REpower+	2022 CA Utility Average
49	0	422



Energy Resources	REpower	REpower+	2022 CA Power Mix
Eligible Renewable[1]	**50.0%**	**100.0%**	**35.8%**
Biomass & Biowaste	20.4%	0.0%	2.1%
Geothermal	0.0%	0.0%	4.7%
Eligible Hydroelectric	1.0%	33.3%	1.1%
Solar	21.5%	33.3%	17.0%
Wind	7.1%	33.3%	10.8%
Coal	**0.0%**	**0.0%**	**2.1%**
Large Hydroelectric	**45.0%**	**0.0%**	**9.2%**
Natural Gas	**0.0%**	**0.0%**	**36.4%**
Nuclear	**0.0%**	**0.0%**	**9.2%**
Other	**0.0%**	**0.0%**	**0.1%**
Unspecified Power[2]	**5.0%**	**0.0%**	**7.1%**
TOTAL	**100.0%**	**100.0%**	**100.0%**
Percentage of Retail Sales Covered by Retired Unbundled RECs[3]**:**	**0%**	**0%**	

[1]The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.

[2]Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.

[3]Renewable energy credits (RECs) are tracking instruments issued for renewable generation. Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.

For specific information about this electricity portfolio, contact:	**Redwood Coast Energy Authority (707) 279-1700**
For general information about the Power Content Label, visit:	https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program

Source: https://redwoodenergy.org/power-resources/ accessed March 26, 2024

According to the Redwood Coast Energy Authority 2022 Energy Use data, the current per capita electrical energy use in Ferndale is estimated to be 2,868 kWh/year and the per household energy use is estimated to be 5,707 kWh/year. This level of consumption generates an estimated 151 Metric Tons of CO_2 equivalent / year ($MTCO_2e$/year) GHG emissions.

INDUSTRIAL POINT SOURCES

Point source emissions constitute the fifth largest source of emissions in Humboldt County (5.6 percent). Point source emissions are generated directly from processes at industrial facilities such as lumber mills, cement plants, asphalt plants, and other goods and materials manufacturing facilities. Ferndale does not have any of these types

of industries. Therefore, estimates for current and future GHG emissions from industrial point sources are not included in this analysis.

SOLID WASTE MANAGEMENT

Solid waste generation makes up the sixth largest source of GHG emissions in Humboldt County (2 percent). Although this is a small contribution to the total, this emissions source represents an easily avoidable source, and is therefore one of the key GHG reduction strategies employed at the state and local CAP level. The decomposition of the organic fraction of municipal solid waste in landfills releases GHG emissions, primarily methane, into the atmosphere. The most common types of landfilled organic waste are food waste, yard waste, and paper. Humboldt County does not have an active landfill and as such, landfill-bound solid waste generated in Humboldt County is trucked to facilities outside of the County using fossil fuels generating additional GHG emissions. Currently, the City of Ferndale generates 1,299 tons of solid waste per year resulting in 209 $MTCO_2e$/ year GHG emissions.

WASTEWATER TREATMENT

Wastewater treatment contributes a small (13.94 $MTCO_2e$/ year in Ferndale, or 1.1 percent of the County's total) amount of GHG emissions to the County's annual inventory. GHGs are emitted directly from the processing of wastewater. Currently, the City of Ferndale wastewater treatment plant processes wastewater generated in the City.

LEAKED REFRIGERANTS

Even though the quantity of GHG emissions from leaked refrigerants is generally small (0.4 percent), refrigerant gases can be hundreds or even thousands of times more potent than CO_2 in terms of their heat-trapping effects in the earth's atmosphere. Data on the use of refrigerants in the City of Ferndale is not available.

REGULATORY SETTING

FEDERAL

Clean Air Act

The Federal Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (US EPA) to define national ambient air quality standards to protect public health and welfare of U.S. Citizens. The Federal CAA does not specifically regulate GHG emissions. However, in 2009 the U.S. Supreme Court determined that the US EPA has the authority to regulate motor vehicle GHG emissions under the Federal CAA (Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120).

The U.S. EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Federal CAA:

- Endangerment Finding: The current and projected concentrations of the six key GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

The US EPA issued a Final Rule for mandatory reporting of GHG emissions in 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of GHG emissions. The Reporting Rule applies to

entities that emit 25,000 metric tons of CO_2e or more per year. The Reporting Rule also mandates recordkeeping and administrative requirements in order for the US EPA to verify annual GHG emissions reports.

In 2012, the US EPA issued a Final Rule that established the GHG permitting thresholds that determines when CAA permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. In Utility Air Regulatory Group v. Environmental Protection Agency (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the US EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Safer Affordable Fuel-Efficient Vehicles Rule

In 2019, the US EPA and the National Highway Traffic Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. The SAFE Rule Part One revokes California's authority to set GHG emissions standards and to adopt its own zero-emission vehicle mandates.

In 2020, the US EPA and the National Highway Traffic Safety Administration published Part Two of the SAFE Vehicles Rule, which revised corporate average fuel economy (CAFE) and CO_2 emissions standards for passenger cars and trucks for model years 2021-2026. The revised CAFE standards require that the vehicle fuel economy standards increase by approximately 1.5 percent each year through model year 2026.

STATE

There are numerous regulations in California aimed at reducing California's GHG emissions. These initiatives are summarized below. The California Air Resources Board (CARB) is responsible for the coordination and administration of both Federal and State air pollution control programs in California. In this capacity, CARB develops control measures to implement state laws and standards associated with GHG emissions.

Senate Bill 1078

SB 1078 (2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017.

Assembly Bill 1493

AB 1493 (2002) requires CARB to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004, adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1), require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes.

On June 30, 2009, the US EPA granted the waiver of Clean Air Act preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the US EPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025.

The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emissions of GHG would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32: California Global Warming Solutions Act of 2006

In 2006, California took a leadership role in addressing the trend of increasing GHG emissions, with the passage of the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.).

AB 32 requires:

- A statewide GHG emissions limit equivalent to 1990 level emissions by 2020
- The adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions.

AB 32 requires the California Air Resources Board (CARB) to adopt regulations by January 1, 2008, that require reporting and verification of statewide GHG emissions and monitoring and enforcement of the regulations. AB 32 also directed CARB to begin developing discrete early actions to reduce GHGs while also preparing a Scoping Plan to identify how best to reach the 2020 limit. The Scoping Plan must be updated at least every five years to ensure that California is on track to meet the targets set out in the legislation.

In June 2007, CARB directed its staff to pursue 37 early actions for inclusion in the Scoping Plan. The broad spectrum of strategies includes: a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate GHG reductions, and green ports. In addition to approving the 37 early actions, CARB directed its staff to further evaluate additional recommendations for early action and subsequently published the "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration". This guidance document includes 44 GHG reduction measures related to transportation fuels, forestry, agriculture, education, energy efficiency, solid waste, cement, oil and gas, electricity, and fire suppression.

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2014 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 statewide goals. The update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer-term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use.

Senate Bill 32

In September 2016, the governor signed SB 32 into law, extending AB 32 by requiring the state to further reduce GHGs to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged).

In December 2017, CARB adopted an updated 2017 Scoping Plan, which provides a framework for achieving the 2030 goal set by SB 32. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently approved legislation, such as SB 350 and SB 1383.

The 2017 Scoping Plan also placed an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2014 Scoping Plan Update, the 2017 Scoping Plan did not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of reducing GHG emissions by six metric tons of carbon dioxide or equivalent GHG's (MT CO2e) by 2030 and two MT CO2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (i.e., city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

CARB recently published the 2022 Scoping Plan Update which assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities. It also sets a more aggressive goal to reduce carbon emissions by 48 percent below 1990 levels in 2030 – this represents an 8 percent increase from the current SB 32 target of a 40 percent reduction.

The Plan stresses that local government action and leadership is critical to implementing the State's climate goals including local GHG reduction strategies adopted as mitigation through review of projects.

The Plan encourages local jurisdictions to: (1) develop climate action plans, sustainability plans, or GHG reduction plans; (2) establish GHG reduction targets; (3) implement mitigation to reduce GHG emissions associated with discretionary projects (whether local, off-site mitigation or carbon offset credits), and (4) leverage regional collaboration to enhance the effectiveness of local climate action and overcome barriers to GHG mitigation.

The Plan identifies three priority areas for local governments as they develop their local climate plans, measures, policies, and actions. Those priority areas include electrification of transportation, reducing vehicle miles travelled (VMT) and decarbonization of buildings. The Plan compiles a non-exhaustive list of impactful GHG reduction strategies that local jurisdictions may implement.

To address all remaining GHG emissions that cannot be completely eliminated, the Plan contemplates both carbon capture and sequestration (CCS) projects as well as mechanical and nature-based carbon removal systems. The Plan also highlights direct air capture projects where CO_2 is removed from the ambient air through different mechanical technologies, such as chemical scrubbing and mineral carbonation, or natural processes. It also discusses the importance of conserving resource lands used for agriculture and forestry and open space for public recreation. The Plan is important to local public agencies because it can be used as a resource to guide agencies in analyzing and reducing GHG emissions in CEQA documents and encouraging other local actions to meet statewide targets.

Senate Bill 107
SB 107 (2006) changed the SB 1078 target date to 2010.

Senate Bill 1368
SB 1368 (2006) is the companion bill to AB 32 that was signed by Governor Schwarzenegger. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. The California Energy Commission (CEC) was also required to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bill 97
SB 97 (2007) requires OPR to prepare, develop, and transmit to the California Natural Resources Agency, guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines, as required by SB 97, providing guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective March 18, 2010.

Executive Order S-1-07
EO S-1-07 (2007) proclaimed that the transportation sector is the main source of GHG emissions in California, contributing over 40 percent of statewide emissions. The order established a goal of reducing the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020. It also directed CARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete, early-action measure after meeting the mandates in AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bill 375
SB 375 (2008) encourages housing and transportation planning on a regional scale, in a manner designed to reduce vehicle use and associated GHG emissions. As required under this law, CARB has assigned regional GHG reduction targets for automobiles and light-duty trucks for 2020 and 2035. The targets apply to the regions in the State covered by the 18 Metropolitan Planning Organizations (MPOs). If the MPOs do not meet the GHG reduction targets, transportation projects will not be eligible for funding programs after January 1, 2012. CARB adopted regional reduction targets in 2010. Humboldt County is not part of a MPO, so SB 375 does not apply directly, but regional strategies adopted by MPOs may provide examples of land use policies that may be incorporated in the Regional Climate Action Plan.

Executive Order S-14-08
In November 2008, Governor Schwarzenegger signed EO S-14-08, which expanded the state's Renewable Portfolio Standard to 33 percent renewable power by 2020.

Executive Order S-21-09
In September 2009, Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing EO S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020.

California Building Standards

On January 12, 2010, the California Building Standards Commission adopted the 2010 California Green Building Standards Code, otherwise known as CALGreen. The list below identifies the most significant CALGreen requirements. In addition, CALGreen encourages local governments to adopt more stringent voluntary provisions to further reduce air pollutant emissions, improve energy efficiency, and conserve natural resources. CALGreen includes the following provisions:

- A 20 percent mandatory reduction in indoor water use, with voluntary goal standards for 30 percent, 35 percent, and 40 percent reductions;
- Separate indoor and outdoor water meters to measure nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;
- Diversion of 50 percent of construction waste from landfills;
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working according to their design efficiencies;
- Mandatory use of low-emissions interior finish materials such as paints, carpet, vinyl flooring, and particleboard.

The State of California also regulates building energy consumption under the state Building Code. The Building Energy Efficiency Standards contained within Part 1 (Administrative Code) and Part 6 (also known as the Title 24 Building Energy Efficiency Standards) of the Building Code apply to energy consumed for heating, cooling, ventilation, water heating and lighting in new residential and non-residential buildings. These standards are updated periodically, with the most recent update in 2022.

CEQA Guidelines (Section 15183.5): Tiering and Streamlining the Analysis of Greenhouse Gas Emissions

In 2010, the State revised California Environmental Quality (CEQA) Guidelines to address the analysis and mitigation of GHG emissions. CEQA Guidelines Section 15183.5 allows a Climate Action Plan (CAP) to provide streamlining benefits for agencies leading the CEQA process if the CAP meets certain requirements, including demonstration that the CAP's emission reduction measures, implemented on a project-by-project basis, will collectively achieve the plan's target. Once a local CAP is adopted, future projects subject to CEQA may address GHG impacts by demonstrating compliance with the applicable measures in the CAP.

Senate Bill X1-2

SB X1-2 (2011) codified the 33 percent Renewable Portfolio Standard by 2020 goal. This new Renewable Portfolio Standard (RPS) preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities must achieve the new RPS goals of 20 percent of retail sales from renewables by the end of 2016 and 33 percent by the end of 2020.

Executive Order B-30-15

In 2015, Governor Edmund G. Brown, Jr. signed Executive Order B-30-15 that established an interim GHG reduction goal for California of 40 percent below 1990 levels by 2030, to ensure progress toward California's goal of reducing GHG emissions by 80 percent below 1990 levels by 2050.

Senate Bill 350

SB 350 (Clean Energy and Pollution Reduction Act of 2015) was signed into law on October 7,2015, establishing new goals for clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 requires the following:

- Increase California's renewable electricity procurement goal under the Renewable Procurement Standard from 33 percent by 2020 to 50 percent by 2030.
- Double existing building energy efficiency by 2030.
- Facilitate the growth of renewable energy markets within the western U.S. by reorganizing the California Independent System Operator (CAISO).

Senate Bill 32

In 2016, Governor Jerry Brown signed Senate Bill 32 (Pavley - Chapter 249, Stats. of 2016), requiring California to reduce GHG emissions to 40 percent below 1990 levels by 2030. SB 32 codifies the interim target created by EO B-30-15 for 2030.

Assembly Bill 197

Signed into law on September 8, 2016, along with SB 32, AB 197 requires CARB to protect the state's most impacted and disadvantaged communities and consider the social costs of the emissions of greenhouse gases. AB 197 establishes the Joint Legislative Committee on Climate Change Policies and requires CARB to provide an annual report on GHG emissions and the Scoping Plan's progress toward meeting the emissions reduction target to the committee.

AB 197 also requires CARB to post current information about GHG and air pollutant emissions on its website and protect the state's "most impacted and disadvantaged communities" by considering the social costs of GHG emissions and to "prioritize both of the following: (a) Emission reduction rules and regulations that result in direct emission reductions at large stationary sources of greenhouse gas emissions sources and direct emission reductions from mobile sources. (b) Emission reduction rules and regulations that result in direct emission reductions from sources other than those specified in subdivision (a)."

Senate Bill 1383

SB 1383 (2016) sets new goals for reducing short-lived climate pollutants (SLCP) to reduce anthropogenic methane emissions by 40 percent, hydrofluorocarbon gases (HFCs) by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill requires CARB to prepare a comprehensive strategy by January 1, 2018, to achieve these goals.

SB 1383 also aims to reduce organic waste in landfills by requiring a 50 percent reduction from 2014 levels by 2020, and a 75 percent reduction from 2014 levels by 2025. SB 1383 also requires a reduction in methane emissions from livestock and dairy manure management operations by up to 40 percent below 2013 levels by 2030.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. The 2020 goal was met, with approximately 36 percent of electricity coming from renewable sources in March 2021.

Executive Order B-55-18

On September 10, 2018, Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Climate Crisis Act

The California Climate Crisis Act (AB 1279) declared that the policy of the state is to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

REGIONAL AND LOCAL

RCEA Comprehensive Action Plan for Energy (CAPE)

RCEA is a Joint Powers Authority whose members include the County of Humboldt, the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell and Trinidad, and the Humboldt Bay Municipal Water District. RCEA's purpose is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region.

The Redwood Coast Energy Authority (RCEA) produced the Humboldt County Comprehensive Energy Action Plan (CAPE) in 2013. The CAPE (also known as the RePower Humboldt Plan) consists of implementation measures specific to the functions of RCEA as the regional energy authority for the County, including working with local jurisdictions to complete greenhouse gas inventories, set greenhouse gas reduction targets, and develop climate action plans.

The CAPE document established strategies to target the following objectives:

1. Regional Energy Planning & Coordination: Facilitate coordinated strategic energy planning within Humboldt County, provide a forum for addressing countywide energy issues, and assist local jurisdictions with completing greenhouse gas inventories, climate action plans, and general plan energy elements.
2. Energy Reliability & Security: Coordinate with utility providers and other local governments on energy emergency planning and response, evaluate transmission and distribution systems, and conduct a climate change risk assessments and develop adaptation plans.
3. Economic Development: Support the development of emerging energy technologies, attract and support energy-sector businesses and ventures, and provide training and workforce development assistance for jobs in the energy field.
4. Built Environment Efficiency: Develop and implement programs which encourage energy efficiency and renewable energy retrofits in existing buildings, and support local implementation of state-wide energy efficiency standards and goals.
5. Education: Through a variety of channels, provide the community with comprehensive education and information on energy conservation, energy planning, renewable energy, and energy-efficiency.
6. Water & Waste: Support water and waste conservation initiatives that will result in reduce energy demand and or renewable energy generation.
7. Transportation: Encourage energy-efficient, health-promoting modes of travel such as walking, bicycling, and public transit, and support the adoption of alternative fuels.
8. Energy Generation & Utility Services: Promote policies which seek to meet local energy needs with a diversity of renewable energy resources, distributed generation, and cogeneration.

This action plan consists of implementation measures specific to the functions of RCEA as the regional energy authority for Humboldt County The strategies within the RCEA 2019 update will be implemented between 2020 - 2030 to achieve the goals listed below.

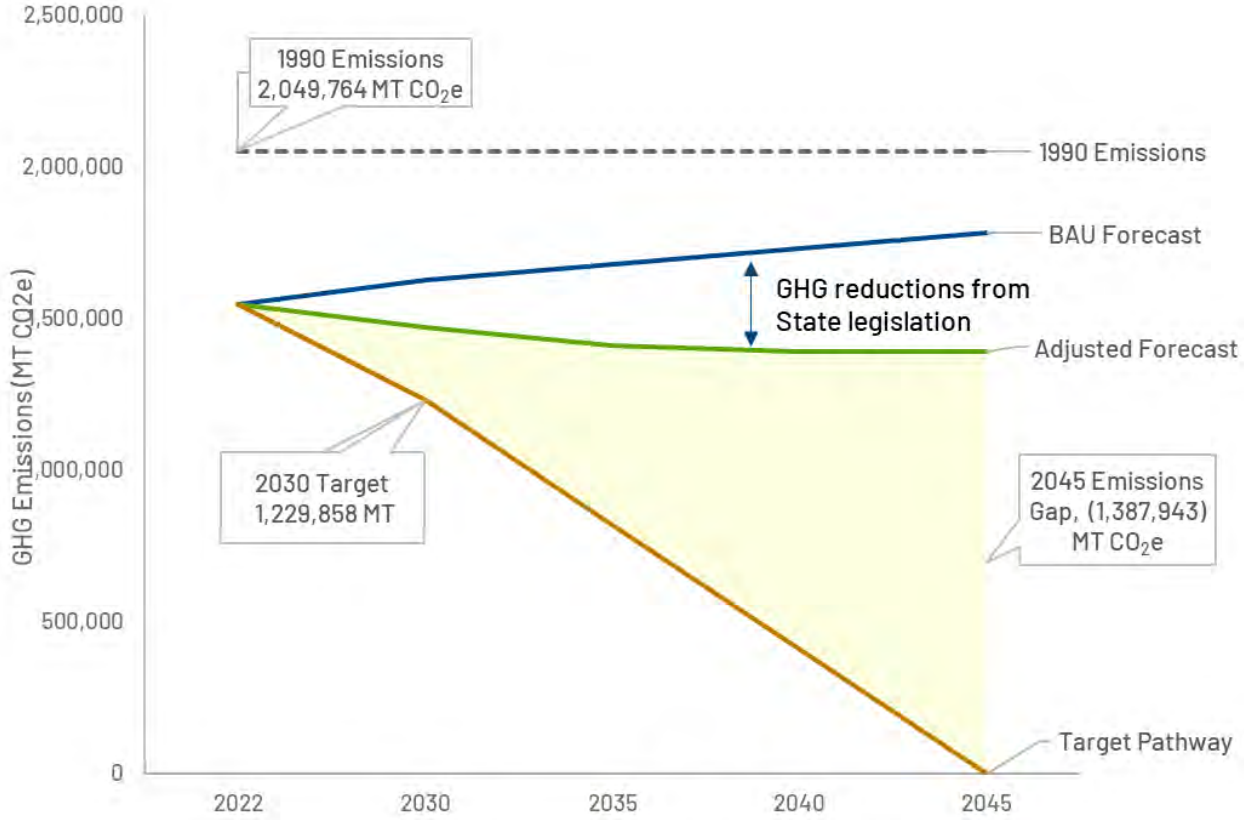
1. Achieve net-zero greenhouse gas emissions county-wide by 2030 through regional planning and coordination.
2. Support the wide-spread installation of customer solar photovoltaic energy systems, with a target to increase installations to a rate of one system every day for the next decade and reach 30MW of customer solar installed by 2025 and 50MW installed by 2030.
3. Accelerate the adoption of electric vehicles, with a target of over 6,000 electric vehicles on the road in Humboldt County by 2025 and 22,000 vehicles by 2030. Develop public, workplace, and residential electric vehicle charging infrastructure necessary to support these county-wide electric vehicle targets.
4. Work with other local public entities to reduce vehicle miles traveled in Humboldt County by at least 25 percent by 2030.
5. By 2030 reduce greenhouse gas emissions from transportation by over 65 percent through reductions in vehicle miles traveled, improved vehicle efficiency, the adoption of electric vehicles, and, where determined to be an effective emissions-reduction strategy, the use of biofuels as a bridge to a full transition to zero-emissions vehicles. Maintain a trajectory of emissions reduction to eliminate the use of fossil fuels by 2050.
6. By 2025 100 percent of RCEA's power mix will be from a combination of state-designated renewable energy sources: solar, wind, biomass, small hydroelectric, geothermal, and state-designated net-zero-carbon-emission existing large hydroelectric facilities.
7. By 2030 Humboldt County will be a net exporter of renewable electricity and RCEA's power mix will consist of 100 percent local, net-zero-carbon-emission renewable sources.
8. Humboldt County can effectively respond to regional and local disruptions to energy supply and distribution systems through modernization of the local electric grid, the deployment of local distributed energy resources, and the development of community microgrids.

2022 Draft Regional Climate Action Plan

As described earlier in this section, the 2022 draft CAP released for public review provides a GHG emissions inventory that has the best available information about Ferndale's GHG emissions. It also includes proposed implementation measures that would reduce the region's GHG emissions consistent with statewide targets of SB 32 (40 percent below 1990 GHG emission levels by 2030). Figure 4.9-6 below compares the 1990 GHG emissions with current and forecasted GHG emissions for the region under three possible scenarios:

1. a "business as usual or BAU" scenario where no measures are taken statewide or locally to reduce GHG emissions,
2. an "adjusted forecast" scenario where no measures are taken locally, only statewide measures are implemented, and
3. a "target pathway" scenario where a combination of statewide measures and local measures are implemented to meet SB 32 targets.

Figure 4.9-6: Humboldt County Greenhouse Gas Emissions Forecast Scenarios 2022 - 2045.



Source: Rincon Consultants, March 2024

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

This analysis uses the significance thresholds from the CEQA Guidelines Appendix G. The Proposed Ferndale General Plan Land Use and Safety Element Updates would result in a significant impact on GHG emissions if they would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases.

Potential GHG emission impacts resulting from adopting the Land Use and Safety Elements were evaluated based on projected population growth, anticipated housing development, Ferndale's electricity use data, estimated propane and wood use, annual solid waste and wastewater generation data, and estimated annual vehicle miles traveled (VMT) based on Humboldt County VMT data. Development associated with the proposed changes in the Land Use Element would result in greenhouse gas emissions in the City of Ferndale.

At the time of this writing, no federal, state, or local air quality regulatory agency has adopted thresholds of significance for GHG emissions. CEQA Guidelines Section 15064.4, subdivision (c), gives the lead agency "discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take

into account the project's incremental contribution to climate change." Therefore, in the absence of quantitative thresholds of significance the proposed Land Use Element GHG impacts were evaluated relative to the state GHG mandates and to whether the project would impede or assist in the regional and state efforts.

The Impacts and Mitigation section below reviews the project to determine how it would affect future GHG emissions and how it would align with GHG reduction plans based on the following factors:

- The Project's GHG emissions analysis considers how the potential land use and policy changes of the proposed project will influence overall GHG emissions in the city.
- For the impacts on other GHG emission reduction plans, the analysis focuses on whether the project would be consistent with statewide GHG emission reduction goals.

This analysis estimates the potential magnitude of the additional greenhouse gas impact by combining available local data with greenhouse gas emissions factors associated with the activity that generates the emissions (e.g., electricity use, VMT, solid waste disposal etc.). Emissions factors used to calculate the annual production of GHG emissions in Ferndale came from the U.S. Environmental Protection Agency, Argonne National Laboratory Motor Vehicle Emissions Simulator (MOVES 3) model, and Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model (GREET), the California Air Resources Board, the California Emissions Estimator Model (CalEEMod), and data provided by RCEA and PG&E.

The analysis of potential GHG emission impacts is programmatic rather than project-specific because the type of development being evaluated is potential development that may or may not occur in the future. Also, the current General Plan documents that Ferndale has a supply of land which can accommodate more development than the projected build-out of 85 new homes between 2023 – 2045 under this EIR's high-growth scenario. This analysis focuses on the potential impacts from key sources of GHG emissions at the anticipated level of new development allowed by the proposed Land Use and Safety Element updates. This analysis does not evaluate GHG emissions from leaked refrigerants, industrial point sources, air travel, livestock and manure management, or septic system emissions as these sources are not likely to be significantly impacted by changes to the Land Use Element.

GHG emissions, by their nature, represent a cumulative impact. No single project could generate enough GHG emissions to noticeably change the global average temperature. Instead, GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. Therefore, the Project analysis is discussed in the context of the cumulative impact.

PROJECT IMPACTS AND MITIGATION

Adoption of the updated Safety Element would have no impact on GHG emissions. Policy 4.4 and Program 4.d in the Safety Element are designed to reduce VMT through development of new trails:

- Policy 4.4: Continue to support active transportation by investing in pedestrian and bike trails.
- Program 4.d: Designate five miles of new trail systems in and around the City by 2040 to support active transportation.
- Program 4.h: Implement the Regional Climate Action Plan measures that are feasible and under the City's control.

The Safety Element also calls for the development of electric vehicle charging stations and initiates a transition of city-owned fleets to electric vehicles. By helping reduce VMT and gas/diesel fuel use in the future, the Safety

Element arguably would have a beneficial impact on GHG emissions. The Safety Element is not further discussed in this section.

Impact GHG-01: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Finding GHG-01: The Land Use Element Update contains policies that support use of alternative transportation fuels, increased energy efficiency through increased multifamily housing development opportunities, and reduced vehicle miles traveled through infill development and improvements to the non-automotive transportation system. The proposed Project will result in development that will generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment even with the mitigation measures described below, resulting in a significant unavoidable impact.

The following sections analyze each of the five key GHG emissions sources that are most impacted by the projected increase population and housing over the planning horizon. Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential infill • Policy LU-1.8 – Multi-Modal Transportation • Policy LU-1.9 – Right-of-Ways • Policy LU-1.10 – Community Spaces
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.6 – Existing Commercial Areas • Policy LU-2.7 – Increase Residential Uses
Land Use Element	Goal LU-3	• Policy LU-3.1 – Conservation • Policy LU-3.5 – Forest Lands Preservation
	Goal LU-4	• Policy LU-4.3 – Agricultural Use Preservation

TRANSPORTATION FUEL USE

Transportation fuel use constitutes the largest (53.2 percent) source of greenhouse gas emissions in the County-wide inventory. The transportation category includes emissions from passenger vehicles, retail and commercial trucks and off-road vehicles and equipment. Section 4.7 Energy Impacts evaluates the impacts of population growth on energy resources including a projection of the increase in transportation fuel use during the planning period. It concludes the increase in population between 2023 and 2045 will result in an additional 77,210 gallons of transportation fuel consumed by new drivers in Ferndale.

Data from the Argonne National Laboratory Greenhouse Gases, Regulated Emissions and Energy Use in Transportation Model (GREET) show that gasoline is the predominant (90 percent) fuel type for all vehicle types in this analysis. It is assumed that the growth in Ferndale VMT will primarily be personal vehicles (e.g., passenger cars, light trucks, vans, motorcycles) that are fueled by gasoline. The California Air Resource Board (CARB) Emissions Factors were used to calculate the total GHG emissions from gasoline fuel use in California (19.49 lbs.

CO_2e/gallon). Multiplying the estimated annual gallons of fuel use by the CO_2e/gallon emission factor from CARB yields a projected increase of 682[1] $MTCO_2e$/year from transportation fuel.

This analysis assumes that fossil fuels (gasoline/diesel) will continue to be the primary form of energy used for transportation needs over the planning horizon. This analysis does not consider long-haul trucking emissions, school bus emissions, solid waste collection truck emissions, nor off-road vehicle emissions as these GHG emissions sources are not anticipated to be significantly changed by the implementation of the Land Use and Safety Elements. It is assumed that emissions from these sources will remain constant throughout the planning period. This analysis shows the maximum anticipated GHG emissions from transportation, however, these GHG emissions levels are likely over-estimates as this analysis does not account for the reduction in transportation-related emissions associated with the increasing use of electric vehicles over time.

ELECTRIC POWER USE

Pacific Gas & Electric Company (PG&E) 2022 energy use data show that the current total energy use in Ferndale is 6,423,493 kWh/year. This dataset was combined with 2022 population data and individual account data to calculate the average per capita (2,868 kWh/year) and per household (5,707 kWh/year) energy use in Ferndale. The Redwood Coast Energy Authority (RCEA) provided 2022 electricity use data for the same "Town or Territory" service area of Ferndale that includes PG&E's data but is broken down by residential, commercial/industrial, and direct access uses. The difference in the total energy use between these two datasets is 2.4 percent; it is assumed that the data discrepancy represents an agricultural or other electricity use that is neither residential nor commercial/industrial electricity demand. Therefore, the RCEA data were used to analyze changes to energy use from the residential and commercial/industrial sectors, and PG&E's data were used to show changes to the total energy use.

As mentioned in Section 4.7 Energy Resources, a 2011 study by the EPA concludes housing type is a very significant determinant of energy consumption. Fairly substantial differences are seen in detached versus attached homes, but the most striking difference is the variation in energy use between single-family detached homes and multifamily homes, due to the inherent efficiencies from more compact size and shared walls among units. Moderate energy-efficient building technologies, such as those qualifying for Energy Star performance, also generate household energy savings that are notable but not as significant as the housing location and type. The study found that multifamily housing types used 50 percent less energy than detached single-family homes.

Section 4.7 – Energy Impacts analysis assumes that annual single-family housing energy use will remain constant into the future. As the changes to the Land Use Update promote higher density housing, a portion of the new housing development is anticipated to be multi-family housing; it's assumed that multi-family housing consumes 50 percent less electricity per house as compared to a single-family house or ADU. These values were multiplied by the projected number of new single-family houses and multi-family housing units to derive a projected increase in residential electricity use between 2023 and 2045. The analysis assumes a projected six percent increase in commercial and industrial electricity use during the planning period to derive a total projected increase of 483,213 kWh/year in 2045 for residential, commercial, and industrial uses combined. This represents a 7.5 percent increase from baseline 2023 energy use.

RCEA and PG&E GHG emissions data and the portion of electricity purchased from each entity (RCEA supplies 89 percent of Ferndale's power and PG&E supplies 11 percent) were used to calculate the increase in total GHG

[1] (77,210 gallons/yr * 19.49 lbs. CO_2e/gallon) / 2,205 (lbs. / metric ton) = 682 $MTCO_2e$/year

emissions from Ferndale's electrical energy use over the planning horizon. An estimated 11.4[2] $MTCO_2e$/year of new GHG emissions is anticipated.

Total 2045 GHG emissions from Ferndale electricity use was calculated by multiplying the projected electricity consumption for the City of Ferndale in 2045 (6,906,706 kWh/year) by the same emissions factors above resulting in an estimated 162 $MTCO_2e$ GHG emissions per year. This analysis conservatively assumes that electric power GHG emissions will remain constant over the planning horizon. California policies mandate increasing renewable energy sources for generating electric power, so this analysis therefore likely overcounts the GHG emissions anticipated due to projected Ferndale population increases.

PROPANE USE

Ferndale's propane use was estimated to be 50,000 gallons per year in the 2013 RCEA Ferndale Energy Assurance Plan. This amounted to an average of 1,000 gallons of propane / household / year. Assuming 50 percent of new housing will use propane appliances for cooking, space heating and water heating, the increase of 85 new homes projected to be developed in Ferndale during the planning period will use 42,500[3] gallons of propane each year:

The U.S. Energy Administration CO_2 Emission Coefficient of 12.62 lbs.CO_2/gallon was used to calculate the increase in GHG emissions from propane use in Ferndale over the planning horizon, which is 244[4] $MTCO_2e$/year.

This estimate assumes that no more than 50 percent of the new housing will use propane for heating and cooking. This assumption is conservative because all new housing will be required to meet Title 24 standards which encourage use of electrical appliances in place of propane appliances. This analysis does not account for wood fuel for heating use as the state of California considers this a form of renewable energy and not a source of GHG emissions.

SOLID WASTE GENERATION

The Humboldt County Waste Characterization Study 2020 - 2021 was used to assess per capita solid waste generation rates. The waste characterization study data showed that Ferndale generates 1,299 tons solid waste / year. The per capita solid waste generation rate was calculated to be 0.9 tons/year. The following table shows projected rates of solid waste generation over the planning time horizon.

Table 4.9-1: Anticipated Solid Waste Generation in Ferndale (2023-2045)

Year	Solid Waste (Tons/year)	Increase from 2023 (Tons/year)	% Increase from 2023
2023	1,299	-	-
2045	1,445	146	11.23%

The Humboldt County Waste Characterization Study 2020 - 2021 found that 33.5 percent of Ferndale's solid waste was comprised of decomposable organic waste. This value was used to calculate the baseline tons per year of organic waste generated in Ferndale (435 tons/year organic waste) based on the 2021 data. This value was then

[2] (483,213 kWh/yr * 0.0000231 MT CO_2e / kWh * 0.89) + (483,213 kWh/yr * 0.0000263 MT CO_2e / kWh * 0.11) = 11.3 $MTCO_2e$/year new GHG emissions

[3] 50 percent * 85 new homes * 1,000 gallons of propane / year = 42,500 gallons of propane / year

[4] (42,500 gallons of propane / year * 12.62 lbs.CO_2/gallon of propane) / 2,204 lbs/metric ton = 244 $MTCO_2e$/year

divided by the population of the same year to generate a per capita organic waste generation rate of 0.335 tons per year organic waste / capita. Using the per capita value was then multiplied by the projected population growth rates to estimate the quantity of additional organic waste that would be generated under each scenario. There is an anticipated 53 additional tons per year of organic waste under the 2045 high growth rate scenario[5].

Mixed organic waste disposed in landfills is the primary source of GHG emissions from solid waste management. Composting operations also emit small quantities of GHG emissions. This analysis assumes that by 2030, 75 percent of all organic waste will be recovered from the solid waste stream and either composed or anaerobically digested per CA SB 1383. The U.S. Environmental Protection Agency Emissions Factor Hub values for GHG emissions from waste sent to landfills (0.48 $MTCO_2e$/ton) and organic waste sent to a compost facility (0.05 $MTCO_2e$/ton) were used to calculate the total GHG emissions from future waste management. These emissions factors include emissions produced from hauling and processing of mixed organic wastes. It is assumed that all non-organic waste will continue to be landfilled/recycled and will not result in significant additional GHG emissions as it is primarily composed of inert materials (e.g., glass, plastic, metal etc.), and as Ferndale begins to participate in collection and local processing of the organic waste in the City-wide waste stream, transportation-related GHG emissions from hauling solid waste to landfills will decrease over time. Therefore, non-organic GHG emissions from hauling the remaining solid waste to landfills is not considered as a significant source of GHGs from solid waste management in Ferndale.

New tons of organic waste generated by the projected increases in the Ferndale population were added to the 2023 quantity of organic waste generation (tons/year) to estimate total annual GHG emissions from organic waste disposal and processing through composting. The resulting GHG emissions from solid waste management in Ferndale is projected to be 77[6] MTCO2e / year from a combination of landfilling (25 percent) and composting (75 percent) organic waste in 2045.

This analysis relies on the significant GHG emissions reductions that will be achieved through participation in regional organic waste processing in the coming years. Humboldt County and local jurisdictions are working on establishing organic waste collection and processing services to comply with SB 1383. Actual GHG emissions reductions from Ferndale waste management activities will depend on the level of organic waste diverted from going into the landfill and sent to a local compost facility instead.

WASTEWATER TREATMENT

Emissions factors from the California Emissions Estimator Model (CalEEMod) Default Data Tables were used to derive the GHG emissions from projected wastewater treatment at the Ferndale wastewater treatment plant. The Ferndale wastewater treatment plant uses the Aero-Mod Sequox process that is completely aerobic.

Table 4.9-2: Annual wastewater treatment direct GHG emissions (short tons / gallon)

Wastewater treatment type	CO_2 Bio	CH_4	N_2O
Aerobic	3.90E-07	1.34E-09	8.52E-10

Source: CalEEMod Appendix G Data Tables; Tab G-3

[5] 0.335 tons organic waste / year / capita * 157 new residents in 2045 = 53 additional tons/year organic waste

[6] (122 tons of organic waste/year landfilled * 0.48 $MTCO_2e$/ton) + (366 tons of organic waste/year composted * 0.05 $MTCO_2e$/ton) = 77 $MTCO_2e$/year from solid waste generation

Data for current wastewater generation in Ferndale was sourced from a 2022 Humboldt County Department of Public works report on "Water Use Estimates for Eel River Valley Groundwater Basin" Appendix A Municipal Water Use Data which shows both raw and summarized data for effluent from the Ferndale wastewater treatment plant each year. The most recent dry weather wastewater effluent disposal data from 2020 (acre-ft/year) were converted to gallons/year and divided by the current 2023 Ferndale population to arrive at an average wastewater generation rate of 45 gallons / capita / day. This value is supported by a 2022 California Water Boards report titled "Comparison of how wastewater characteristics have changed over the life of typical California wastewater treatment facilities" which found that average per capita wastewater generation in California had decreased to 37 gallons / capita /day. The 45 gallons / capita / day value was used in combination with projected population increases to determine the estimated increase in wastewater generation.

Table 4.9-3: New Residential Wastewater Generation

	GPD	MGD
2035 Estimated population LOW growth rate (0.03%)	227	0.000227
2035 Estimated population HIGH growth rate (0.5%)	3,852	0.003852
2045 Estimated population LOW growth rate (0.03%)	408	0.000408
2045 Estimated population HIGH growth rate (0.5%)	7,115	0.007115

The estimated increases in wastewater generation were combined with the GHG emission factors shown above to estimate the potential increase in GHG emissions from additional wastewater treatment required due to population growth.

Table 4.9-4: Additional GHG Emissions from Increased Ferndale Wastewater Treatment (Metric Tons / year)

	Additional $MTCO_2e$/year	% Change
2035 Estimated population LOW growth rate (0.03%)	0.029	0.36%
2035 Estimated population HIGH growth rate (0.5%)	0.498	6.20%
2045 Estimated population LOW growth rate (0.03%)	0.053	0.66%
2045 Estimated population HIGH growth rate (0.5%)	0.919	11.45%

The analysis shows that GHG emissions from wastewater treatment at estimated population growth in 2045 (157 new residents) are anticipated to result in an 11 percent increase as compared to the current GHG emissions level.

TOTAL GREENHOUSE GAS EMISSIONS

Construction

Project construction activities would result in a temporary increase in GHG emissions, including exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty machinery. Construction would require clearing, earthmoving, and delivery equipment as used for similar projects and which have been accounted for in the state's emission inventory and reduction strategy for both on- and off-road vehicles. Emissions during construction would not be a considerable contribution to the cumulative GHG impact given that construction would be temporary, of short duration, and would not require a large fleet of earthmoving equipment and soil-

off hauling beyond the normal equipment and activities related to such projects. Therefore, the Project's construction-related emissions would be less than significant.

Operation

New development and an increase in population would result in GHG emissions from new fossil fuel energy uses including transportation fuels, electricity, and propane. Future GHG emissions would also be generated from increased solid waste and wastewater generation. The five primary GHG emissions sources in Ferndale were added together to estimate the total GHG emissions of the Project as described above. The analysis shows that GHG emissions are anticipated to increase by 808 MTCO2e / year above 2022 levels from population growth and potential development during the planning period.

Table 4.9-5: Projected Increase in Total GHG Emissions 2023-2045

GHG Emission Source[1]	2045 New MTCO2e/year
Transportation Fuel Use	682
Electricity Use	11.4
Propane Fuel Use	244
Solid Waste Management	-132
Wastewater Treatment	2
Total New Annual GHG Emissions	**808**

[1]See topic specific GHG Emission Source discussions above for additional information about assumptions and calculations.

Increased energy efficiency of new homes is expected to reduce Ferndale's electricity use and propane fuel use which will reduce GHG emissions in these sectors. The Land Use Element Update involves the reclassification of several land use designations that will encourage new multifamily uses and increased residential densities in or near already developed areas, as well as residential and commercial infill. The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Proposed changes to the Land Use Map #'s 1, 4 – 7, 11 and 12 will all increase the residential development potential on parcels already planned and zoned for residential use, some of which are included in the residential land inventory of the 2019 Housing Element. The proposed changes that involve replacing the existing R-1 Residential Low-Density designation with an R-2 Medium Density designation will also allow duplexes, triplexes and other multifamily configurations as principally permitted uses. By encouraging multifamily housing at higher densities, the proposed land use map changes are expected to reduce the electricity and propane energy use in new residential developments which will also reduce GHG emissions from those sources.

The proposed allowable housing density changes included in the Land Use Element could result in population growth which will increase GHG emissions from within the City of Ferndale. However, both the Land Use Element and the Safely Element Updates contain policies that support GHG emissions reductions as compared to the existing General Plan. Additionally, California policies require a reduction in greenhouse gas emissions generated from electricity, vehicle fuels, and waste management. These mandates will result in lower GHG emissions from these sources over the course of the planning horizon.

The Project's incremental contribution of GHG emissions is relatively small when compared to regional and state emissions. The City of Ferndale's estimated portion of County-wide GHG emissions is very small, only 0.7%. The potential development resulting from Land Use Element implementation would include policies intended to

reduce GHG emissions. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning at the City, county and subregional level, and other measures to reduce automobile use. Energy conservation measures also can contribute to reductions in GHG emissions. Implementing the policies and other actions of the Project encouraging infill and mixed use will help reduce GHG emissions from the future development it is intended to stimulate. Additional GHG emission reductions would be achieved by actions that the City may take in the future as directed by Safety Element Program 4.h, implementing the Regional Climate Action Plan.

Compliance with these policies would help reduce GHG emissions from future development under the proposed General Plan update. Additional reductions would be achieved by Reginal Climate Action Plan (CAP) actions that the City may adopt that encourage the use of alternatively fueled and electrified equipment. However, because specific information about CAP measures to reduce emissions is unknown at this time, it is uncertain what the future intensity the proposed Project update would exceed an adopted GHG significance threshold. Consequently, this impact is conservatively determined to be significant. Ensuring that emissions will fall below an adopted GHG emissions threshold is not feasible at this time. Therefore, this impact is considered significant and unavoidable.

MITIGATION MEASURES

Mitigation Measure GHG-1: Implement Safety Element Program 4.h Participate in the Regional Climate Action Plan development and implement the GHG reduction measures that are feasible and under the City's control.

SIGNIFICANT AFTER MITIGATION

Significant and unavoidable.

Impact GHG-02: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions?

Finding GHG-02: Adoption of the Land Use Elements supports development of housing at higher densities, reduced VMT through infill development and increased trail development, electrification of homes and use of low-carbon transportation fuels. However, the Project may conflict with an applicable plan policy or regulation adopted for the purpose of reducing GHG emissions, resulting in a significant unavoidable impact.

The state's 2022 Scoping Plan Appendix D, Local Actions, contains CARB's recommended actions for local governments to assist California to attain the state's climate goals. CARB identifies the following as priority areas for local jurisdictions to focus on: transportation electrification, vehicle miles traveled reduction, and building decarbonization.

Although the Land Use Element has the potential to increase housing resulting in population growth, the proposed Land Use Element policies described above encouraging multifamily housing at higher densities, supporting infill development within walking distance to City services, including multi-modal trail development, and conservation of forest lands are aligned with the GHG emission reduction requirements of SB 32. Safety Element Policies to support the electrification of homes and buildings, install EV charging stations, convert City fleets to electric

vehicles by 2040, and incentivize the conversion of propane appliances to electric also align with SB 32 requirements.

These reductions in GHG emissions may be partially or entirely offset by other aspects of the Project that generate GHG emissions. For example, the GHG emissions associated with new construction under the Project will involve construction techniques and materials that will likely be similar to new construction under current conditions because there would be no difference whether that construction occurs in a more compact form under the Project or in a more dispersed manner that would occur under existing conditions. Also, the GHG's emitted during the use of individual homes and businesses is expected to be about the same under the Project as under current conditions because the same energy efficiency standards will be applied through the building permit approval process so the GHG's emitted to heat, cool and power homes and businesses will be similar.

The state's current goal for GHG emission reduction is described in the 2022 Scoping Plan Update: reduce GHG emissions to 85 percent below 1990 levels by 2045[7]. The Land Use and Safety Element policies support key areas of focus on low-carbon transportation and low-carbon electrical energy as well as conservation of working and natural lands. However, although estimates have been calculated, it is uncertain how much GHG emissions will result from the Project and whether those emissions are consistent with or conflict with the targets established in the state's 2022 Scoping Plan. Accordingly, this impact is conservatively determined to be significant and unavoidable.

MITIGATION MEASURE

Mitigation Measure GHG-1.

SIGNIFICANT AFTER MITIGATION

Significant and unavoidable.

Bibliography

Anderson, Jeffery K. (Update 1: 2018). "Sea Level Rise in the Humboldt Region". https://digitalcommons.humboldt.edu/cgi/viewcontent.cgi?article=1019&context=hsuslri_local. Accessed 2.14.24.

Argonne National Laboratory, Energy Systems Division. (2020). Update of Emission Factors of Greenhouse Gases and Criteria Air Pollutants, and Generation Efficiencies of the U.S. Electricity Generation Sector. https://publications.anl.gov/anlpubs/2020/09/162084.pdf. Accessed 12.11.24.

Argonne National Laboratory (2021). Motor Vehicle Emissions Simulator (MOVES 3) Emissions Factors.

California Air Resources Board (2018). CA-GREET (Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model) 3.0 Supplemental Document and Tables of Changes.

California Air Resources Board (2017). Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed 1.16.24.

[7] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan accessed October 13, 2023.

California Department of Justice. Climate Change Impacts in California. https://oag.ca.gov/environment/impact. Accessed 2.14.24.

California Department of Motor Vehicles; Vehicles registered by County by type. https://www.dmv.ca.gov/portal/dmv-research-reports/research-development-data-dashboards/vehicles-registered-by-county/. Accessed 1.16.24.

California Emissions Estimator Model (CalEEMod) User Guide Appendix G Default Data Tables https://www.caleemod.com/user-guide. Accessed 12.11.24.

California Emergency Management Agency (CEMA). 2012. California Adaptation Planning Guide. http://resources.ca.gov/docs/climate/01APG_Planning_for_Adaptive_Communities.pdf. Accessed February 24, 2024.

California Environmental Quality Act (CEQA) Guidelines Appendix G. https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf. Accessed 2.14.24.

City of Ferndale General Plan Noise and Air Quality Elements. (2016).

Grantham, Theodore (University of California, Berkeley). (2018) California's Fourth Climate Assessment; North Coast Region Report. https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-001_NorthCoast_ADA.pdf. Accessed 2.14.24.

Humboldt County General Plan Update Draft Environmental Impact Report (2012). https://humboldtgov.org/DocumentCenter/View/1811/Draft-Environmental-Impact-Report---Complete-Document-PDF. Accessed 2.12.24.

Humboldt Regional Climate Action Plan; Public Review Draft. (2022). https://humboldtgov.org/2464/Climate-Action-Plan. Accessed 2.12.24.

Humboldt County Climate Action Plan Consistency Checklist. (2022). https://humboldtgov.org/2464/Climate-Action-Plan. Accessed 2.12.24.

Humboldt County Department of Public Works. (2022). "Water Use Estimates for Eel River Valley Groundwater Basin" https://humboldtgov.org/DocumentCenter/View/102830/Water-Use-Technical-Memorandum. Accessed 2.10.24.

Intergovernmental Panel on Climate Change (IPCC). 2023. Sixth Assessment Report. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf. Accessed 2.24. 24.

North Coast Regional Water Quality Control Board. (2018). "Waste Discharge Requirements and Water Recycling Requirements for the City of Ferndale Wastewater Treatment Plant Humboldt County." https://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2018/18_0046_Ferndale_NPDES.pdf. Accessed 12.11.24.

Pacific Gas & Electric Company (PG&E) Energy Data Request - Public Data Sets (2023). https://pge-energydatarequest.com/public_datasets/download?type=gaz&file=PGE_2023_Q4_GasUsageByZip.zip. Accessed 12.11.24.

Pacific Gas & Electric Company (PG&E) Power Content Label. https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed 1.11.24.

Redwood Coast Energy Authority Ferndale Energy Use Data Request. Personal communication with Joseph Sloan January 2024.

Redwood Coast Energy Authority; Power Resources webpage. https://redwoodenergy.org/power-resources/. Accessed 2.12.24.

U.S. Department of Energy, Average Fuel Economy by Major Vehicle Category. https://afdc.energy.gov/data. Accessed 12.11.23.

U.S. Environmental Protection Agency AP-42: Compilation of Air Emissions Factors from Stationary Sources, Fifth Edition, Volume I Chapter 10: Residential Wood Stoves. https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s10.pdf. Accessed 2.11.24.

U.S. Environmental Protection Agency AP-42: Compilation of Air Emissions Factors from Stationary Sources, Fifth Edition, Volume I Chapter 1: External Combustion Sources; Liquefied Petroleum Gas Combustion. https://www.epa.gov/sites/default/files/2020-09/documents/1.5_liquefied_petroleum_gas_combustion.pdf. Accessed 2.17.24. Accessed 12.12.24.

U.S. Environmental Protection Agency Burn Wise; Energy Efficiency and Your Wood-Burning Appliance. https://www.epa.gov/burnwise/energy-efficiency-and-your-wood-burning-appliance. Accessed 2.11.24.

U.S. Environmental Protection Agency. Burn Wise; Choosing the Right Woodburning Stove; Emissions Limits for Wood Stoves. https://www.epa.gov/burnwise/choosing-right-wood-burning-stove#:~:text=While%20older%20uncertified%20stoves%20release,of%20EPA%2Dcertified%20wood%20stoves. Accessed 11.2.23.

U.S. Environmental Protection Agency Emissions Factors Hub: www.epa.gov/system/files/documents/2023-03/ghg_emission_factors_hub.pdf

U.S. Environmental Protection Agency Emissions & Generation Resource Integrated Database (eGRID) Data. https://www.epa.gov/egrid/download-data. Accessed 2.17.24.

U.S. Environmental Protection Agency Emissions & Generation Resource Integrated Database (eGRID) Related Materials. https://www.epa.gov/egrid/egrid-related-materials#eGRID%20PM2.5. Accessed 2.17.24.

U.S. Environmental Protection Agency Overview of Greenhouse Gas Emissions. https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed 2.17.24.

4.10 HAZARDS AND HAZARDOUS MATERIALS

This section presents an analysis of potential hazards and hazardous materials related to the City of Ferndale's General Plan Land Use and Safety Elements Update. The scope of these materials spans a broad range of products and applications including household cleaners, industrial solvents, paints, pesticides, petroleum products, gases, and various toxins utilized in agriculture, commercial, and industrial sectors. Accidental releases of these materials can occur due to various incidents such as roadway accidents, industrial mishaps, and fires.

The term "hazardous materials," as employed in this context, extends to all substances defined in the California Health and Safety Code HSC §25260 as any material that poses a significant present or potential hazard to human health and safety or to the environment due to its quantity, concentration, or physical or chemical characteristics (Humboldt County , 2023). This definition includes but is not limited to hazardous substances, hazardous waste, and any material deemed potentially harmful to human health and safety or the environment if released.

Critical areas of concern include the evaluation of risks to public health and the environment resulting from the use, transport, and disposal of hazardous materials, potential hazards from accidental hazardous material releases, and potential impacts to schools, in compliance with Government Code § 65962.5 (California Environmental Protection Agency , n.d.). Furthermore, potential safety concerns associated with proximity to airports, obstacles to emergency response and evacuation plans, and the risk of wildfires are also considered.

These assessments adhere to federal, state, and local regulations and draw on data from the City of Ferndale Draft Safety Element & Land Use Elements, 2019 City of Ferndale Housing Element Initial Study (IS) and Negative Declaration (ND), Humboldt County General Plan EIR Hazardous Materials and Hazardous Waste section along with the Humboldt County Operational Area Hazard Mitigation Plan 2019 (HCOAHMP). Additional information has been sourced from state and regional entities that manage hazards and hazardous materials.

ENVIRONMENTAL SETTING

DEFINITIONS

Airport Land Use Plan – An airport land use plan provides guidelines for appropriate land uses around airports to ensure compatibility between the airport operations and surrounding land uses, primarily in terms of safety, noise, and overflight impacts.

Biohazardous Waste – Any waste containing infectious materials or potentially infectious substances such as blood. Of special concern are sharp wastes such as needles, blades, and pipette tips, which can cause injury during disposal.

Corrective Action Report (CORRACTS) Database – A database that tracks hazardous waste sites requiring corrective action. It is used to inform local land use decisions and safety planning.

Cortese List – The Hazardous Waste and Substances Sites List, a planning document used in California to comply with the California Environmental Quality Act (CEQA) for providing information about hazardous material release sites.

Climate Action Plan (CAP) – A detailed and strategic framework for measuring, planning, and reducing greenhouse gas emissions and related climatic impacts.

Emergency Operations Plan (EOP) – A plan under the jurisdiction of the HCOES, outlining how emergencies should be responded to within Humboldt County. It encompasses a variety of emergency situations, including natural disasters, technological incidents, and national security emergencies.

Emergency Response Plan – An emergency response plan is a plan that is developed to mitigate the damage of potential events that could endanger an organization's ability to function. It includes procedures for dealing with sudden, unexpected potentially harmful events.

Extremely Hazardous Substance (EHS) – Defined by the Emergency Planning and Community Right-to-Know Act (EPCRA), an EHS is a type of hazardous material that can seriously harm people, property, or the environment when released in small amounts.

Fire Hazard Severity Zones (FHSZ) – Designated areas that map the potential fire behavior and the expected fire severity to determine the level of risk to people, buildings, and infrastructure. These zones consider factors like vegetation, weather, slope, fire history, and building construction, and are classified into different levels like Moderate, High, or Very High to guide building and land management practices.

Greenhouse Gases (GHGs) – Gases that trap heat in the atmosphere, contributing to the greenhouse effect and global warming. Common GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorinated gases.

Hazard – A hazard is a source of potential danger or adverse condition that could harm people and/or cause property damage. Natural hazards include floods, winds, and earthquakes. Man-made hazards include acts of terrorism and hazardous material spills.

Hazard Mitigation Grant Program (HMGP) – Authorized under Section 202 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster.

Hazard Mitigation – Any action taken to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster.

Hazard Mitigation Plan – A hazard mitigation plan is a collaborative document that identifies hazards that could affect a community, assesses vulnerability to hazards, and represents consensus decisions reached on how to minimize or eliminate the effects of hazards.

Hazardous Material – A hazardous material is a substance or combination of substances that (1) can cause or contribute to an increase in mortality or serious irreversible or incapacitating reversible illnesses, or (2) pose a present or potential hazard to human life, property, or the environment. Hazardous materials could cause these effects because of their quantity, concentration, or physical, chemical, or infectious characteristics.

Hazardous Materials Transportation – This refers to the movement of hazardous materials by air, rail, highway, or water. Regulations in place aim to prevent accidents and spills during transportation.

Hazardous Substance – The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) defines a hazardous substance as any substance designated by the Environmental Protection Agency (EPA) that, when released into the environment, may present substantial danger to public health, welfare, or the environment.

Heavy Metals – These are generally defined as metals with relatively high densities, atomic weights, or atomic numbers. The criteria used, and whether metalloids are included, vary depending on the author and context.

Some heavy metals, such as lead and mercury, are toxic and can cause damage to human health and the environment.

Leaking Underground Tank (LUST) Cleanup Sites – These are locations where underground storage tanks have leaked hazardous substances such as fuel.

Local Area Hazard Mitigation Plan (LAHMP) – Another plan overseen by the HCOES, which guides strategies for mitigating hazards that might impact Humboldt County.

Material Safety Data Sheets (MSDS) – These are detailed information bulletins prepared by the manufacturer or importer of a chemical that describe the physical and chemical properties, physical and health hazards, routes of exposure, precautions for safe handling and use, emergency and first-aid procedures, and control measures.

Particulate Matter (PM) – Particles are a complex mixture of extremely small particles and liquid droplets that get into the air. Once inhaled, these particles can affect the heart and lungs and cause serious health effects.

Polychlorinated biphenyl (PCB's) – Polychlorinated biphenyls are highly carcinogenic chemical compounds, formerly used in industrial and consumer products, whose production was banned in the United States by the Toxic Substances Control Act in 1976 and internationally by the Stockholm Convention on Persistent Organic Pollutants in 2001.

Physical Hazard – Physical hazards include a variety of hazardous substances or conditions such as extreme temperatures, radiation, noise, vibration, and pressure.

Radiological Hazard – Any situation or event that has the potential for exposure to ionizing radiation in excess of established safety standards.

Resource Conservation and Recovery Information System (RCRIS-TSD) – A system that helps track hazardous waste sites at the local level. It feeds into local land use decisions and safety planning.

Solid Waste – Solid waste is any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or an air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material.

Toxic Substance – As defined by the Toxic Substances Control Act (TSCA), a toxic substance is any chemical or mixture that may cause substantial harm to human health or the environment.

Unified Program – A collaborative framework coordinated by CalEPA that integrates various initiatives related to hazardous materials and waste management. This includes Hazardous Materials Release Response Plans and Inventories, the Underground Storage Tank Program, the Aboveground Petroleum Storage Tank Act, and more.

Universal Waste – A category of waste materials designated as "universal waste" by the EPA or a state agency in the United States. It includes materials that are widely produced across all industries and households, including batteries, pesticides, equipment containing mercury, and lamps.

Volatile Organic Compounds (VOCs) – VOCs are compounds that easily become vapors or gases. They are released from burning fuel such as gasoline, wood, coal, or natural gas, and from solvents, paints, glues, and other products used in homes and businesses.

Wildland Fires – Also known as wildfires, these are uncontrolled fires that quickly spread across vegetation and forests spurred by wind and dry conditions. These can lead to large-scale property damage and loss of life.

HAZARDS AND HAZARDOUS MATERIALS

Ferndale presently faces minimal threats from hazardous materials use or storage, given the lack of significant industrial operations in and around the City with no heavy industrial uses located in the City and few transporters of hazardous waste within the planning area. However, there are still potential risks associated with the transportation of hazardous materials, particularly along S.R. 211/Main Street corridor, as they could lead to hazards in the event of a materials leak or a transport truck accident.

Humboldt County reports between 50 to 100 accidental hazardous material spills annually which occur along roadways, commercial sites, private and public properties (Humboldt County, 2017). These spills range from major incidents to minor spills and false alarms. Occasionally, hazardous waste, such as used motor oil, solvents, or paint, is illegally dumped in remote areas of the county, including along roadways. Unregulated and/or illegal business operations can contribute significantly to this issue, posing substantial threats to human health, property, and the environment. In response, the County Public Health Branch and the Code Enforcement Unit address roughly 100 to 200 dumping complaints yearly, which include nuisance roadside garbage dumps, illegal disposal sites, sharps/needle dumps, and abandoned appliances or vehicles. Costs associated with cleanup are offset in part by the Humboldt Waste Management Authority's waste management fee.

Hazardous material incident response in Ferndale is primarily managed by the FVFD and supplemented by the Regional Hazardous Material Response Team (HMRT) in emergencies involving hazardous materials. The multi-agency HMRT, includes representatives from Humboldt Bay Fire, Yurok Tribe, Humboldt Waste Management Authority, California Highway Patrol, and FVFD, has a Cal OES Type II rating, demonstrating adherence to rigorous standards in equipment use and training (Humboldt County Fire Chief's Association, 2020). Ferndale's strategies for risk minimization include strict compliance with all relevant safety laws and regulations including the County's IWMP, proactive coordination with county, state, and federal bodies, as well as ongoing maintenance and enhancement of first responder equipment and personnel training within FVFD. Collectively, these measures illustrate Ferndale's commitment to minimizing the impact of hazardous material incidents within the Planning Area.

The City is home to four facilities that handle, generate, or store hazardous materials in quantities that require them to submit information through the California Environmental Reporting System (CERS) and undergo annual inspections by the Certified Unified Program Agency (CUPA). These four facilities are subject to specialized regulatory oversight due to the nature and potential risks associated with handling hazardous materials. Other facilities primarily consist of hazardous waste generators, with a significant portion tied to the agricultural industry. The distinction between these two groups of facilities lies in the types and quantities of materials they manage. The CUPA-regulated facilities are subject to more stringent safety regulations to mitigate potential hazards and ensure compliance with safety standards.

The CUPA, along with the Department of Toxic Substances Control (DTSC), plays an instrumental role in monitoring hazardous materials sites within the Planning Area. As designated by the California Unified Hazardous Waste and hazardous materials management regulatory program, Humboldt County Division of Environmental Health Hazardous Materials Program serves as the CUPA for Ferndale. The CUPA conducts regular compliance inspections and is responsible for the oversight of facilities that handle hazardous materials, generate or treat hazardous waste, and/or operate underground storage tanks. Through its education and enforcement programs, the CUPA strives to minimize the risk of chemical exposure to human health and the environment. Importantly, it also provides crucial facility information to local fire prevention agencies, aiding them in preparing for emergencies at regulated facilities.

As noted previously, the CUPA manages the Underground Storage Tanks (USTs) which are an area of concern due to their potential to leak hazardous materials into the soil and groundwater. These tanks, often associated with automotive-related activities, are closely monitored by the CUPA and the State Water Resources Control Board's (SWRCB). Within the Planning Area, the SWRCB has identified over 37 sites involving leaking underground storage tanks (LUSTs), most of which have undergone successful remediation involving tank and contaminated soil removal. Presently, three open LUST cases remain, which the SWRCB and the CUPA continue to monitor.

Table 4.10-1: Open Leaking Underground Storage Tank (LUST) Sites in the Planning Area

Site Name	Cleanup Status	Address	City
Bar Ale Of Humboldt	Open – Eligible for closure, Land Use Restrictions	989 Milton Ave	Ferndale
Ferndale Museum	Open – Assessment and Interim Remedial Action	515 Shaw Ave	Ferndale
Lorenzo's Gas & Grocery	Open - Site Assessment	1392 Main St	Ferndale

Source: State Water Resources Control Board Geotracker 2021

Natural disasters in the Ferndale region pose a potential risk for the accidental release of hazardous materials. According to the Humboldt County Operational Hazard Mitigation Program, its geographical location near the Cascadia Subduction Zone exposes the City to a high likelihood of seismic activities. These seismic events have the potential to disrupt the storage and transportation of hazardous materials. Ferndale's proximity to the Eel River also presents a high likelihood of floods, which could undermine the containment and control of hazardous substances. The region is also potentially vulnerable to wildfires, which could lead to the dispersion of hazardous materials through smoke and damage containment facilities. Ferndale's susceptibility to the effects of natural disasters, including increased wildfire frequency and more intense flooding due to changing precipitation patterns, emphasizes the importance of considering these factors in the Safety and Land Use Elements of the General Plan and are covered in more detail in the Impact Analysis section below.

REGULATORY SETTING

FEDERAL

The federal regulatory framework governing the updates to the City of Ferndale's Land Use and Safety Elements encompasses a range of measures to ensure efficient land management and safety provisions. Interagency cooperation ensures that evolving land use needs, and safety regulations align with national policies, promote sustainable development, and safeguard public health.

Federal entities establish a robust regulatory landscape that not only guides State and local laws and policies related to hazards and hazardous materials but also significantly shapes public policy. This helps reduce potential hazards and risks associated with the use, transport, and disposal of hazardous materials. The federal agencies involved in regulating hazards are outlined below.

United States Environmental Protection Agency (EPA)

The EPA implements and enforces a variety of environmental programs established by United States Congress. The EPA enforces the Resource Conservation and Recovery Act of 1976 (RCRA) which is the principal law governing hazardous waste, underground storage tanks, and solid waste. The EPA also promotes waste reduction strategies like recycling, and formulates regulations for hazardous waste transportation. EPA strategies and regulations guide the City of Ferndale’s handling and disposal of hazardous materials, aligning local actions with broader federal objectives for waste management and environmental protection.

Occupational Safety and Health Administration (OSHA)

OSHA enforces the Occupational Safety and Health Act. It mandates specific training for members of the public and public agencies who handle hazardous materials and ensures the availability of material safety data sheets (MSDS) from manufacturers. These regulations help ensure that workers and the general public are adequately informed and trained to deal with potential exposure risks and how to handle incidents involving hazardous materials. OSHA is responsible for enforcing Regulation 29 of the Code of Federal Regulations (CFR), Standard 1926.62. This specific regulation governs activities that involve lead, such as the renovation, demolition, or construction of structures that contain lead materials. The rule aims to ensure that lead materials, including lead-based paint, are safely handled and disposed of, minimizing the risk to workers and the general public, and protecting the environment from lead contamination.

United States Department of Transportation (USDOT)

USDOT regulates the transport of hazardous materials and waste across all transportation modes. It stipulates specific packaging requirements based on the nature of the materials transported and creates regulations to prevent accidents and spills during the transportation of hazardous materials.

Federal Emergency Management Agency (FEMA)

FEMA plays a critical role in disaster response management, including hazards related to hazardous materials. FEMA coordinates disaster response and recovery efforts nationwide to ensure efficient and effective disaster planning, mitigation and management. FEMA's National Flood Insurance Program (NFIP) aids Ferndale by providing flood insurance, promoting sound floodplain management practices, and offering financial support for flood damage mitigation projects.

STATE

The State of California incorporates a comprehensive set of statutory provisions that govern safety, transportation, and land-use planning policies for all its governmental jurisdictions. These provisions not only provide guidance for the revision of Ferndale's General Plan but also play a role in shaping the City's land use and safety strategies, ensuring their alignment with broader state objectives. State laws and regulations construct robust and modern frameworks, empowering Ferndale to keep its land use and safety elements updated and in compliance with the latest legislative mandates. State agencies involved in regulating hazards are listed below.

California Environmental Protection Agency (CalEPA)

The CalEPA regulates hazardous materials and waste in California. Established by Governor's Executive Order in 1991, CalEPA ensures compliance with hazardous materials and waste regulations throughout the state, in accordance with the California Hazardous Waste Control Law (Health and Safety Code Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Divisions 4 and 4.5). CalEPA oversees several subsidiary departments including the Department of Toxic Substances Control (DTSC), responsible for hazardous waste regulation, and the Office of Environmental Health Hazard Assessment (OEHHA), tasked with providing environmental health hazard assessments. CalEPA also regulates the Unified Program, a collaborative framework coordinating various initiatives in Counties and municipalities, including “right-to-know” laws, Hazardous Materials Release Response Plans, hazardous material inventory disclosure, the Underground Storage Tank Program, the Aboveground Petroleum Storage Tank Act, and others. This regulatory structure ensures agencies, municipalities businesses and municipalities adhere to stringent standards for handling, storing, transporting, disposing of, treating, reducing, and cleaning up hazardous waste, thereby safeguarding the health and safety of the community and its environment.

DTSC specifically carries out programs under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), aiming to protect people from hazardous substances and wastes. The Department manages hazardous waste, remediates existing contamination, and works to reduce the production of hazardous waste in California. Their responsibilities encompass permitting, inspection, compliance, and corrective actions, ensuring that hazardous waste is managed according to state and federal requirements.

California Department of Forestry and Fire Protection (CAL FIRE); Office of the State Fire Marshal (OSFM)
CAL FIRE and OSFM are responsible for fire protection and prevention as well as hazardous materials management and response. This department is tasked with the enforcement of fire suppression & prevention related laws, all-hazard response, regulation of chemical flame retardants, hazardous liquid pipelines, and more. Their work supports CAL FIRE's mission to protect life and property through a combination of engineering programs, law and code enforcement and education.

By integrating State regulatory framework into Ferndale's Safety and Housing Element Update, the City takes on a comprehensive approach to managing hazards and hazardous materials, aligning with state-level objectives and regulations. The oversight of these agencies not only aids in achieving regulatory compliance but also ensures the City's commitment to public safety, environmental health, and effective emergency response planning.

Regional Water Quality Control Board, North Coast Region
The Regional Water Quality Control Board, North Coast Region (RWQCB) collaborates with the State Water Resources Control Board (SWRCB) to maintain water quality and manage sites that might affect water resources. The Resource Conservation and Recovery Information System (RCRIS-TSD) and the Corrective Action Report (CORRACTS) database help track hazardous waste sites at the local level. This information feeds into local land use decisions and safety planning.

REGIONAL AND LOCAL

The regulatory setting for Ferndale's land use and safety systems is supported by an array of local and regional public agencies. These local regulators create and enforce policy on hazards and hazardous materials aligning with the broader state and federal regulatory structures and ensure Ferndale's developmental targets are in sync with overarching planning doctrines. Regional and local agencies each have responsibilities to inform hazard mitigation planning and response in the City of Ferndale and the wider Humboldt County.

Humboldt County Office of Emergency Services (HCOES)
The Humboldt County Office of Emergency Services (HCOES), including the Humboldt County Sherrif's Department holds the primary responsibility for emergency response and evacuation planning in the County. HCOES's responds to a variety of emergency situations, including man-made & natural disasters, technological incidents, and national security emergencies that may affect Humboldt County. They are also responsible for planning, updating and enforcing County hazard mitigation plans including the Emergency Operations Plan (EOP) and Humboldt County Operational Area Hazard Mitigation Plan (HCOAHMP). Various departments, such as the Ferndale Volunteer Fire Department (FVFD) and the City of Ferndale work in tandem with HCOES for emergency planning including, risk and hazard management and emergency response procedures.

Humboldt County Department of Health and Human Services, Division of Environmental Health (HCDEH)
The Humboldt County Department of Health and Human Services, Division of Environmental Health (HCDEH), oversees compliance with environmental laws and mitigation of public health risks associated with hazardous materials within Ferndale's jurisdiction. The Certified Unified Program Agency (CUPA), a subset of HCDEH, handles

hazardous materials monitors, inspects facilities that handle or produce hazardous materials and enforces State laws to protect the public and environment in Humboldt County. Both entities closely monitor the five open Leaking Underground Tank (LUST) cleanup sites in Ferndale, as well as approximately 30 closed cleanup sites within the City.

Humboldt County Department of Public Works Natural Resources

The Humboldt County Department of Public Works Natural Resources manages environmental regulatory compliance for public projects at the local level. They regulate environmental compliance and the design of public infrastructure projects including roads, bridges, airports, buildings, parks, and solid waste facilities. The engineering department assesses environmental constraints in project planning and design and conducts environmental reviews according to State standards. Through their efforts, they provide a critical service in managing and mitigating hazards and hazardous materials in Ferndale and the broader Humboldt County.

REGULATORY FRAMEWORK

FEDERAL

42 U.S.C. §§ 6901–6992k (Resource Conservation and Recovery Act of 1976 (RCRA) §6901 et seq as amended by the Hazardous and Solid Waste Amendments of 1984)

The RCRA gives the EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, and storage. The amendments in 1984 enhanced these regulations by emphasizing waste minimization and phasing out land disposal of hazardous waste. RCRA ensures that any hazardous waste generated in the United States is properly identified, handled, and disposed of, minimizing the risk of harm to the environment and public health.

42 U.S.C. §§ 7401–7671q (Clean Air Act (CAA))

The CAA represents one of the most significant pieces of environmental legislation in the United States. Established in 1970 and significantly amended in 1990, the CAA mandates a comprehensive federal framework aimed at regulating airborne contaminants that are detrimental to public health and welfare. It authorizes the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Act also directs states to develop state implementation plans (SIPs) to regulate their air quality and meet these standards.

42 U.S.C. §§ 9601–9675 (Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund)

The CERCLA enforces clean-up of hazardous waste sites and potential liability for associated damages for offenders. This legislation empowers the EPA to identify responsible parties for site contamination and mandate environmental remediation. In cases where a responsible party cannot be identified, the EPA is authorized to perform the cleanup using the Superfund, ensuring that abandoned or uncontrolled hazardous sites are effectively remediated, thereby protecting surrounding communities and ecosystems.

Public Law 99-499 (Superfund Amendments and Reauthorization Act of 1986 (SARA)) and 42 U.S.C. §§ 11001–11050 (Emergency Planning and Community Right-to-Know Act (EPCRA))

Subsequent amendments were made to CERCLA through the SARA, which established EPCRA. This act mandates states and communities to develop emergency response plans for potential chemical accidents. EPCRA ensures transparency and access to information about hazardous chemicals present in the community and their potential risks.

42 U.S.C. §§ 5165 and Public Law 106-390 (Disaster Mitigation Act of 2000)

The DMA 2000 legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide. It is pivotal in establishing a pre-disaster hazard mitigation program and controls the federal disaster assistance distribution. This Act mandates state and local governments to formulate and implement approved hazard mitigation plans as a condition for receiving non-emergency disaster assistance.

15 U.S.C. §§ 2601–2697 (Toxic Substances Control Act (TSCA) of 1976)

The TSCA enabled the EPA to track the industrial chemicals presently produced or imported into the United States including approximately 75,000 chemical substances. The EPA maintains a screening process for these substances and maintains reporting or testing requirements for those that may pose an environmental or human health hazard. The TSCA authorizes the EPA to prohibit the manufacture and import of chemicals that present an unreasonable risk. The EPA regulates new chemicals developed each year by the industry, particularly those with unknown or hazardous characteristics safeguarding human health and the environment. This act supplements other federal statutes, including the Clean Air Act and the Toxics Release Inventory under EPCRA.

49 U.S.C. §§ 5101–5128 (Hazardous Materials Transportation Act (HMTA)

The HMTA's purpose is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce." In California, state agencies responsible for enforcing these federal and state regulations, responding to transportation emergencies involving hazardous materials, and governing the permitting for hazardous materials transportation, are the California Highway Patrol and the California Department of Transportation (Caltrans).

No specific U.S.C. (Federal Response Plan (FRP) of 1999 and the National Response Framework (NRF))

The FRP is a framework that facilitates the collaboration of numerous federal departments, agencies, and the American Red Cross. The NRF replaced the FRP and serves as the guide for how the nation responds to all types of disasters and emergencies. It acts as a blueprint for managing and coordinating federal assistance in conjunction with local and state governments in the face of major emergencies or disasters.

Part of 15 U.S.C. §§ 2601–2697 (Regulation of Polychlorinated Biphenyls (PCBs) under the Toxic Substances Control Act)

PCBs are an identified class of industrial waste products regulated under the TSCA. PCBs are categorized as persistent organic pollutants (POPs) due to their tendency to persist in the environment and bioaccumulate in living organisms. The EPA governs the use and handling of PCBs, providing requirements for the reporting, record-keeping, and disposal of PCBs.

Title 29 of the CFR, Standard 1926.62 (Regulation 29 of the Code of Federal Regulations enforced by OSHA)

OSHA's Lead Standard for the construction industry addresses activities involving lead, a material that can cause serious health problems for employees. The standard sets permissible exposure limits, provides for the implementation of protective measures, mandates worker training, and establishes specific recordkeeping requirements to protect employees who may be exposed to lead hazards.

STATE

California Health and Safety Code, Chapter 6.95 and Title 19 of the California Code of Regulations (CCR), Section 2729

These provisions establish the minimum requirements for business emergency plans and chemical inventory reporting in California. Mandates include presenting emergency response plans, details of training programs, and

an inventory of hazardous materials used, stored, or handled onsite. If hazardous materials or mixtures are used beyond certain quantities, a comprehensive business plan must be implemented.

Assembly Bill 2948 of 1986 (The Tanner Act)
This act shapes the hazardous waste management framework in California. It outlines the steps for preparing hazardous waste management plans and establishing hazardous waste facilities within the state. The plans must detail waste management planning, the permit process for new or expanded facilities, and the state appeals process for specific local decisions.

Part 2 of Title 24 of the CCR (California Building Code (CBC))
The CBC sets building design standards in California, adapting the International Building Code to California's specific conditions. The CBC establishes the minimum standard for building design, with further adjustments allowed at the jurisdictional level. Compliance for both commercial and residential buildings is checked by city and county building officials during the planning stage.

CCR Title 8, Section 1532 (California's Occupational Safety and Health Administration's Lead in Construction Standard)
This standard regulates lead-based paint, addressing various aspects including permissible exposure limits, exposure assessment, compliance methods, respiratory protection, protective clothing and equipment, housekeeping, medical surveillance, and medical removal protection. It also sets rules for employee information, training and certification, signage, record-keeping, monitoring, and agency notification.

Resource Conservation and Recovery Act (RCRA) Subtitle I and the State Water Resources Control Board (SWRCB) (Underground Storage Tank (UST) Program)
The management of hazardous materials and waste involves several state programs, among which the UST Program is a key initiative. To address groundwater contamination resulting from the storage of petroleum products and other hazardous substances in USTs, the RCRA established regulations for their storage and proactive measures for leak prevention and cleanup. In California, the SWRCB aids local agencies in enforcing UST requirements under EPA oversight. The UST program, focusing on leak prevention, cleanup, enforcement, and tank tester licensing, aims to protect public health, safety, and the environment. The SWRCB utilizes the GeoTracker system to gather data from over 10,000 leaking UST sites statewide, while the Department of Environmental Health Division ensures adherence to stringent protocols during UST installation and removal.

Federal regulations (CFR, EPA, SARA, Title III) and California state regulations (Hazardous Materials Disclosure Programs)
Businesses handling hazardous materials above certain thresholds are required by these regulations to submit a comprehensive hazardous materials business plan to their local Certified Unified Program Agency (CUPA). These plans, reviewed and recertified every three years, should detail the owner/operator's identification, an inventory of hazardous materials, and an emergency response and training strategy. Facilities must keep a copy of their plan on-site for quick reference in case of a spill or release.

Title III of the Superfund Amendments and Reauthorization Act (SARA) (Local Emergency Planning Committee)
This act mandates the development of an emergency response plan for chemical emergencies within the community. The plan must identify local facilities and transportation routes where hazardous materials are present and provide immediate response procedures, including a community-wide evacuation plan. It also outlines methods for community notification in case of an incident, lists local facility response coordinators, and includes a plan testing strategy.

California Labor Code, Section 6409.1 [b], Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) and Section 9030 of the California Labor Code

These codes outline the emergency notification requirements for a hazardous chemical release, and if a release results in injuries or harmful exposure to workers, it must be reported immediately to the California Occupational Safety and Health Administration.

Senate Bill 1889 (California Accidental Release Prevention Program (CalARP))

Introduced to replace the California Risk Management and Prevention Program, CalARP requires businesses to prepare risk management plans involving detailed engineering analyses of potential accident factors and mitigation measures. Local governments typically take the lead in working with businesses under this program.

LOCAL & REGIONAL

Humboldt County has enacted land use code provisions that are relevant to hazards and hazardous materials including:

- Title III, Division 8 - Environmental Protection, Chapter 3: Prohibits the transport of nuclear waste through the County for purposes of storage or disposal, reducing potential risks and hazards associated with the transportation of such highly hazardous substances.
- Title III, Division 8 - Environmental Protection, Chapter 4: Adheres to state law regarding the underground storage of hazardous substances. This legislation ensures the safety and well-being of County's residents and the environment by governing the proper storage methods for hazardous materials.
- Title V, Division 6 - Hazardous Materials: Provides a policy framework and procedures for the administrative enforcement of violations of state laws regarding hazardous materials release response plans and inventory. It emphasizes managing hazardous materials appropriately, preventing inadvertent release, and ensuring quick and effective response to incidents.
- Title VI - Water and Sewage, Division 4**: Prohibits the pollution of waters in the County. This legislation preserves the quality of the county's water resources, prevents contamination, and ensures community health and safety and the ecological integrity of local water-dependent ecosystems.

The North Coast Unified Air Quality Management District has adopted Regulation III, which includes Rule 300, State Airborne Toxic Control Measures. This rule, in accordance with the California State Air Toxic Control Measures (ATCMs) as per Health and Safety Code 39666, pertains to asbestos airborne toxic control measure for construction, grading, quarrying, and surface mining operations. This legislation underscores the importance of maintaining air quality by controlling the release of airborne toxic contaminants, particularly during activities like construction and mining that can potentially release harmful substances like asbestos.

Hazardous materials handling in the City of Ferndale is regulated by several federal, state, and local agencies, including the local Certified Unified Program Agency (CUPA), which is the Humboldt County Health Department, Division of Environmental Health. CUPA oversees facilities that store, handle, or generate hazardous materials. It requires facilities exceeding certain hazardous materials thresholds to submit a Hazardous Materials Business Plan (HMBP) to provide information for emergency responders and to satisfy federal and state Community Right-To-Know laws. Those facilities not mandated to complete an HMBP are still required to register their hazardous materials with CUPA. CUPA also oversees the Hazardous Materials Area Plan (HMAP) which provides policy and procedural guidelines for responding to hazardous materials incidents within Humboldt County.

The City of Ferndale's General Plan reflects its commitment to managing hazardous materials and protecting its residents. The General Plan sets out expectations for land uses that transport, generate, use, handle, store,

dispose of, and/or emit hazardous materials. These uses must comply with all relevant federal, state, county, and local hazardous materials safety laws and regulations. The plan emphasizes coordination with various governing bodies including the County, the Regional Water Quality Control Board, the Environmental Protection Agency, and the State Department of Toxic Substance Control. The FVFD also plays a crucial role in maintaining readiness to respond to hazardous materials incidents.

The City of Ferndale also adheres to its municipal code, which lays out regulations for managing and responding to hazardous materials. This code mandates that all hazardous materials and waste handlers comply with local, state, and federal regulations. The FVFD, as part of their responsibilities, maintains up-to-date equipment and trained personnel to respond to hazardous materials incidents. This further complements the strategies outlined in the City's General Plan to minimize the impacts of hazardous material releases within the area.

In addition to these measures, Ferndale has adopted Humboldt County's Integrated Waste Management Plan (IWMP). The plan's goal is to reduce the generation of household hazardous waste through promotion of reuse, recycling, landfill diversion, and the use of non-toxic alternatives. It also emphasizes educating the public about managing household hazardous waste effectively. Through these comprehensive efforts, the City of Ferndale remains dedicated to ensuring the safety and health of its residents and the environment.

Impact Analysis

Significance Thresholds and Methodology

According to Appendix G of the CEQA Guidelines, impacts related to hazards and hazardous materials would be significant if the Project would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and, as a result, would create a significant hazard to the public or the environment;
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area;
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Project Impacts and Mitigation

Impact HAZ-01: Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Finding HAZ-01: Development facilitated by the Project could potentially involve the transport, use, or disposal of hazardous materials. However, adherence to the City of

Ferndale's proposed goals and policies, as well as compliance with local, state, and federal regulations regarding hazardous materials, ensures the adequate management of potential risks. The Project's emphasis on appropriate infill development, coupled with the implementation of the Safety Element of the Ferndale General Plan, will further minimize potential hazards to the public and the environment. Therefore, the impact associated with hazardous materials is considered to be less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-2	Policy LU-2.1 – Appropriate Infill Development
Safety Element	Goal SE-5	Policy 5.1 – Minimize exposure to known and suspected hazardous materials
Safety Element	Goal SE-5	Policy 5.2 – Work with appropriate agencies to keep current on hazardous materials transport, storage, treatment, and disposal regulations
Safety Element	Goal SE-5	Program 5.a – Require compliance with applicable laws and regulations
Safety Element	Goal SE-5	Program 5.b – Enforce adopted building and fire codes
Safety Element	Goal SE-5	Program 5.d – Regulate location of new facilities handling hazardous materials
Safety Element	Goal SE-5	Program 5.f – Coordinate with County, State, and Federal agencies
Safety Element	Goal SE-5	Program 5.h – Require fire safe design standards
Safety Element	Goal SE-6	Policy 6.1 – Protect life and property through land use and development practices
Safety Element	Goal SE-6	Policy 6.6 – Implement measures that reduce risk
Safety Element	Goal SE-6	Program 6.a – Regularly review and update regulations to ensure applicable mitigation measures are clearly defined
Safety Element	Goal SE-7	Program 7.a – Update and adopt the City of Ferndale Emergency Operations Plan (EOP)
Safety Element	Goal SE-7	Program 7.b – Upgrade the City's Emergency Operations Center (EOC)
Safety Element	Goal SE-7	Program 7.m – Conduct performance audits of public safety facilities

The potential for the Project to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is minimized by adhering to the various federal, state, and local regulations including Ferndale General Plan policies and implementation programs. Land Use Element Goal LU-2 and Policy LU-2.1 support appropriate infill development, which typically involves less hazardous materials than

other types of development. By focusing on infill development, the Project may reduce the amount of hazardous material needed and therefore decrease the potential hazard.

The Safety Element further provides several goals and policies related to the handling of hazardous materials. Goal 5 is designed to protect people and property from risks associated with hazardous materials. Implementing Policy 5.1 would minimize exposure to hazardous materials through routine transport, use, disposal, or accidental release. Policy 5.2 stresses the importance of working with appropriate agencies to stay updated on hazardous materials transport, storage, treatment, and disposal regulations, and Program 5.a ensures compliance with these laws and regulations.

Additionally, Program 5.b enforces building and fire codes to minimize potential public harm from hazardous material storage. Program 5.d regulates the location of new facilities that handle hazardous materials, ensuring they are a safe distance from sensitive land uses. These precautions help to ensure that hazardous materials are handled and disposed of properly, reducing potential risks. Program 5.f outlines coordination with County, State, and Federal agencies to minimize exposure to hazardous materials. Program 5.h underscores the necessity of fire-safe design standards in new developments, and Goal 6, Policy 6.1 and Policy 6.6 emphasize protective measures, such as land use and development practices, and implementing measures to reduce risk.

Lastly, the Project can further safeguard against hazards by adopting and maintaining effective emergency response protocols in line with Goal 7, such as Program 7.a and Program 7.b which detail updating the City of Ferndale Emergency Operations Plan (EOP) and upgrading the City's Emergency Operations Center (EOC). Regular audits of public safety facilities (Program 7.m) can also ensure they are adequately prepared to handle emergencies related to hazardous materials. In conclusion, while the Project may result in development that involves the transport, use, or disposal of hazardous materials, the policies and programs would manage these activities and minimize potential hazards effectively. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-02: Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Finding HAZ-02: Although hazardous materials releases cannot feasibly be eliminated and potential risk of exposure to sensitive receptors cannot be reduced to zero, no reasonably foreseeable upsets or accidents exist and implementation of existing regulations and policies under the proposed Land Use and Safety Elements would reduce these potential risks to a less than significant level.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Goal S-1	Policy S-1.1: Compliance with Regulations - The City shall ensure compliance with all applicable local, state, and federal regulations pertaining to the management of hazardous materials.
Safety Element	Goal S-2	Policy S-2.1: Safety Measures - The City shall enforce and strengthen safety measures and accident prevention strategies in any development project that involves the potential use or transport of hazardous materials.
Land Use Element	Goal LU-2	Policy LU-2.1: Reduce the risk associated with hazardous materials by promoting infill development which typically involve less hazardous material.

The potential release of hazardous materials from the Project during unforeseen conditions presents various environmental implications. During construction, the utilization of chemicals and materials such as solvents, paints, adhesives, and heavy metals is standard. Improper handling, storage, or disposal can result in accidental spills or leaks, which may contaminate the soil or pollute adjacent water sources. Local agencies, specifically the Humboldt County Office of Emergency Services (HCOES), Ferndale Volunteer Fire Department (FVFD) and the Certified Unified Program Agency (CUPA), play vital roles in responding to and managing risks from accidental release of hazardous materials.

The City of Ferndale's commitment to public safety is reflected in policies and programs in the Safety Element and Land Use Element of the Ferndale General Plan, including Goal SE-5, Policy SE-5.1, and Goal LU-2, which mitigates such risks substantially. Goal SE-5 and Policy SE-5.1 promote a strong hazardous materials response system and enforce safe construction practices, which are designed to prevent unexpected accidents. Additionally, Goal LU-2 encourages suitable infill development, which typically involves fewer hazardous materials, thereby reducing the overall risk.

The Proposed Project, despite having the potential to involve the release of hazardous materials into the environment through accident conditions during construction or operational phases, includes policies that enhance safety measures and prevent conditions that would lead to the release of hazardous materials into the environment. The Project is in alignment with local, state, and federal regulations, devising strategies to prevent and mitigate harm from such accidents. Although hazardous materials releases cannot feasibly be eliminated and potential risk of exposure to sensitive receptors cannot be reduced to zero, no reasonably foreseeable upsets or accidents exist and implementation of existing regulations and policies under the proposed Land Use and Safety Elements would reduce these potential risks to a less than significant level.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-03: Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Finding HAZ-03: The potential for new development to result in hazardous emissions or handling of hazardous materials near sensitive receptors, such as Ferndale Elementary or High School, cannot be completely eliminated given the general nature of potential construction activities. However, the Project's nature and scope are not anticipated to directly or indirectly involve hazardous materials that would pose a significant risk to these sensitive receptors. With adherence to applicable federal, state, and local regulations governing hazardous materials and compliance with the existing and proposed policies, the potential risks associated with hazardous materials would be less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	Policy LU-1.7: Planned Development
Safety Element	Goal SE-5	Policy 5.1: Minimize exposure to known and suspected hazardous materials
Safety Element	Goal SE-5	Program 5.a: Ensure compliance with hazardous materials regulations
Safety Element	Goal SE-5	Program 5.d: Ensure safe distances for hazardous materials handling
Safety Element	Goal SE-5	Program 5.f: Coordinate with other agencies for hazardous materials handling
Safety Element	Goal SE-5	Policy 5.4: Inform the public about hazardous materials management
Safety Element	Goal SE-5	Program 5.i: Post hazardous waste drop-off information

Updates to the City's Land Use and Safety Elements in and of itself do not generate hazardous waste. However, potential new development may occur within a quarter-mile of Ferndale Elementary or High Schools. Several measures outlined in the Safety Element would reduce potential risks associated with potential indirect impacts of hazardous materials near sensitive receptors. Policies and programs such as Policy 5.1, Program 5.a, Program 5.d, and Program 5.f require proper management, safe distances, and compliance with laws and regulations for handling hazardous materials. Moreover, Policy 5.4 and Program 5.i ensure the public and school authorities are well-informed about hazardous materials management. As such, any construction activities resulting from the project implementation would be required to adhere to these stringent safety measures, minimizing potential hazardous emissions near schools. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-04: Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Finding HAZ-04: The proposed Project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5. Therefore, it would not create a significant hazard to the public or the environment resulting in no impact.

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Upon review of the most recent Cortese List, there were no sites listed for Ferndale. As such, there would be no hazard created to the public or the environment due to the Project's location.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-05: Would the Project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

Finding HAZ-05: The Project is not located within an airport land use plan or within two miles of a public airport or public use airport, so the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area resulting in no impact.

Given that the proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport, there are no safety hazards or excessive noise concerns associated with proximity to an airport.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-06: Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Finding HAZ-06: The Project, which includes goals, policies, and programs designed to ensure emergency preparedness and response, would not impair the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Thus, it would result in no impact.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	Policy LU-1.7: Planned Development
Safety Element	Goal SE-6	Policy 6.8: Encourage the development of connected neighborhoods that provide at least two exit routes that can be utilized during emergency evacuation.
Safety Element	Goal SE-7	Policy 7.4: Designate, equip, and publicize locations of emergency assembly points throughout the City.
Safety Element	Goal SE-7	Policy 7.7: Designate alternate routes to transport public safety employees from outlying areas when main route is impassable.
Safety Element	Goal SE-7	Program 7.c: Establish redundant communication capabilities throughout the City.
Safety Element	Goal SE-7	Program 7.h: Regularly update and publicize the City's EOP to include evacuation routes, emergency connectors, and emergency shelters in conformance with state guidelines through the City's website, local radio, local newspaper, and other community outreach sources.
Safety Element	Goal SE-8	Policy 8.1: Minimize risk through land use regulation and development risk assessment.
Safety Element	Goal SE-9	Policy 9.1: Implement mitigation measures at the time of development.
Safety Element	Goal SE-10	Policy 10.1: Enhance community preparation and training to reduce risks associated with a major disaster.
Safety Element	Goal SE-10	Policy 10.2: Promote active coordination and a consistent level of mitigation and preparedness among neighboring jurisdictions and other entities.

The General Plan Land Use and Safety Elements include policies and procedures intended to support adopted emergency response or evacuation plans. This includes Land Use Element goals and policies, Goal LU-1 and Policy LU-1.7: Planned Development, which ensure all future developments align with the City's existing emergency response and evacuation plans. Under the Safety Element, Goal SE-6 and Policy 6.8 emphasize the importance of creating connected neighborhoods with at least two exit routes, which can greatly improve the efficiency of evacuations during emergencies. Goal SE-7, in addition to Policies 7.4 and 7.7, pushes for the identification and publicizing of emergency assembly points and alternate routes, enabling a smoother evacuation process when required. Program 7.c focuses on establishing redundant communication capabilities throughout the City, while Program 7.h is responsible for regular updates and publication of the City's Emergency Operations Plan (EOP), effectively improving public awareness regarding evacuation routes, emergency connectors and emergency shelters.

The Project also prioritizes risk minimization through land use regulation and development risk assessment, as reflected in Goals SE-8 and SE-9 along with Policies 8.1 and 9.1. They mandate the implementation of mitigation measures at the time of development, such as ensuring adequate fire egress, safe passage of emergency vehicles,

and clear street signs and house numbers. These aspects all contribute to a safer and more efficient evacuation process.

Lastly, through Safety Element Goal SE-10, Policies 10.1 and 10.2, the Project underscores the significance of community preparation and training for disaster scenarios and actively promotes coordination among neighboring jurisdictions and other entities. This implies that if the community is well-prepared and the inter-jurisdictional coordination is smooth, the risk to life and property during a major disaster can be significantly reduced. Given this comprehensive approach in integrating these goals and policies, the Project would not impair or interfere with any existing or adopted emergency response or evacuation plans. As such, there would be no impact.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HAZ-07: Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Finding HAZ-07: Implementation of the Land Use and Safety Elements would not directly or indirectly expose people or structures to a significant risk, loss, injury, or death involving wildfires due to the low likelihood of wildfire as mapped by the fire hazard severity index. In addition, proposed policies aim to reduce potential wildfire risks, the impact would be less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	Policy LU-1.7: Planned Development
Safety Element	Goal SE-6	Policy 6.8: Encourage the development of connected neighborhoods that provide at least two exit routes that can be utilized during emergency evacuation.
Safety Element	Goal SE-10	Policy 10.1: Develop and maintain a disaster response plan that includes evacuation procedures and is coordinated with regional, state, and federal emergency response agencies.
Safety Element	Goal SE-10	Policy 10.2: Encourage community participation in disaster preparedness and response training programs.

The City is in a developed area with no CALFIRE mapped fire hazard severity. Areas adjacent to the City are located within the SRA and ranked as having a moderate fire hazard severity index. See Section 4.21 – Wildfire for discussion on potential impacts involving wildfires from implementation of the Land Use and Safety Elements. Policies and goals in Ferndale's General Plan—especially within the Safety Element—strive to address potential wildfire risk. For example, Goal SE-6 and Policy 6.8 accentuate the necessity for interconnected neighborhoods with multiple exit routes (Ferndale General Plan, Safety Element). Similarly, Goal SE-10, along with Policies 10.1

and 10.2, underscore the importance of community preparedness and training for emergency scenarios and improve City emergency response and evacuation procedures (Ferndale General Plan, Safety Element). Other fire safety measures include the use of fire-resistant materials in construction, the creation of defensible spaces around structures in accordance with & 2019 California Fire Code (Part 9 of Title 24) and the incorporation of state-of-the-art fire detection and suppression systems (City of Ferndale, 2011). For these reasons, implementation of the Land Use and Safety Elements would not increase the existing risk of wildland fires to people or structures.

The wildland-urban interface south of Ferndale is categorized as a Moderate Fire Hazard Severity Zone (FHSZ) according to criteria such as fuel loading, slope, fire weather, and wind conditions, as per the Public Resource Code 4202 and Government Code 51178 (Office of the State Fire Marshall , 2022). Historical fire perimeters from CALFIRE show no recorded fires within Ferndale's immediate vicinity (California Department of Technology, 2022). The City's coastal influence tends to mitigate inherent wildfire risk. Nevertheless, surrounding areas may still be susceptible to wildfires, indirectly impacting the City and Project area via compromised air quality and transportation disruption.

Implementation of the Land Use and Safety Elements would not directly or indirectly expose people or structures to a significant risk, loss, injury, or death involving wildfires due to the low likelihood of wildfire as mapped by the fire hazard severity index. In addition, proposed policies aim to reduce potential wildfire risks, the impact would be **less than significant**.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

California Department of Technology. (2022). *California State Geoportal*. Retrieved from California Fire Perimeters (all): https://gis.data.ca.gov/datasets/CALFIRE-Forestry::california-fire-perimeters-all-1/explore?location=40.516439%2C-124.237596%2C11.81

California Environmental Protection Agency . (n.d.). *Cortese List: Section 65962.5(c)*. Retrieved from CalEPA: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5c/#:~:text=Section%2065962.5(c)(1,the%20Health%20and%20Safety%20Code.

City of Ferndale. (2011). *Building Inspector - Construction Code Ordinance 2011-01.* Ferndale: City of Ferndale. Retrieved from https://ci.ferndale.ca.us/wp/laws/law-11-01.pdf

Humboldt County . (2023, August 03). *Hazardous Materials Unit*. Retrieved from Humboldt County: https://humboldtgov.org/684/Hazardous-Materials-Unit#:~:text=The%20California%20Health%20and%20Safety,into%20the%20workplace%20or%20environment.%22

Humboldt County. (2017, April 20). *Humboldt County General Plan Revised Draft EIR* . Retrieved from Chapter 3.7, Hazards and Hazardous Materials :

https://humboldtgov.org/DocumentCenter/View/58836/Section-37-Hazards-and-Hazardous-Materials-Revised-DEIR-PDF

Humboldt County Fire Chief's Association. (2020, November). *Humboldt County Fire Protection Services*. Retrieved from 2020 Annual Report: https://humboldtgov.org/DocumentCenter/View/101542/2020-Annual-Fire-Chiefs-Report

Office of the State Fire Marshall . (2022, December). *Frequently Asked Questions About: 2022 Fire Hazard Severity Zones* . Retrieved from /https://osfm.fire.ca.gov/media/winfmowp/2022-fhsz-faqs-dec-2022-_final.pdf

Tetra Tech. (2020, August 8). *Humboldt County Operational Area Hazard Mitigation Plan 2019 Volume 1 Area Wide Elements.* Retrieved from Humboldt County Sherrif's Office: https://humboldtgov.org/DocumentCenter/View/82770/HumboldtCountyHMP_Vol1_Final_2020-01-28

4.11 HYDROLOGY AND WATER QUALITY

This section provides background information regarding hydrology and water quality conditions within the City, and an assessment of the potential impacts of implementing the proposed Land Use and Safety Element Updates. The topography, soils, subsurface materials, and geologic structure of the Project area are discussed in Section 4.8 Geology and Soils. The distribution and relationship of these features influences the location, form, and quality of surface water and groundwater. In turn, these features are shaped, to a greater or lesser extent, by standing and flowing water, whether on the ground surface or beneath it. This section incorporates information and analysis from the 2022 City of Ferndale Drainage Master Plan and the 2017 Humboldt County General Plan Update EIR Section 3.11 Hydrology and Water Quality.

ENVIRONMENTAL SETTING

SURFACE WATER

The City of Ferndale has an average annual precipitation of 42.9 inches over the past 30 years (1992-2021) and has a marine cloud layer that frequently envelops the area providing additional moisture even during the drier summer months. Major hydrological features around the City include the Eel River approximately three miles north and east of the City, and the Pacific Ocean located around 4 miles west.

The City is situated within the lower Eel River Watershed which spans a large area of approximately 3,680 square miles, extending from the mountainous headwaters in the east to its mouth at the Pacific Ocean. The Eel River floodplain north of Ferndale includes an estuary where fresh river water mixes with salt water from the ocean. An evaluation of the estuary as part of an effort to consider alternatives to the City of Ferndale's wastewater disposal system determined the estuary may reach as far inland as Fortuna (EPA, 2007) approximately five miles east of Ferndale.

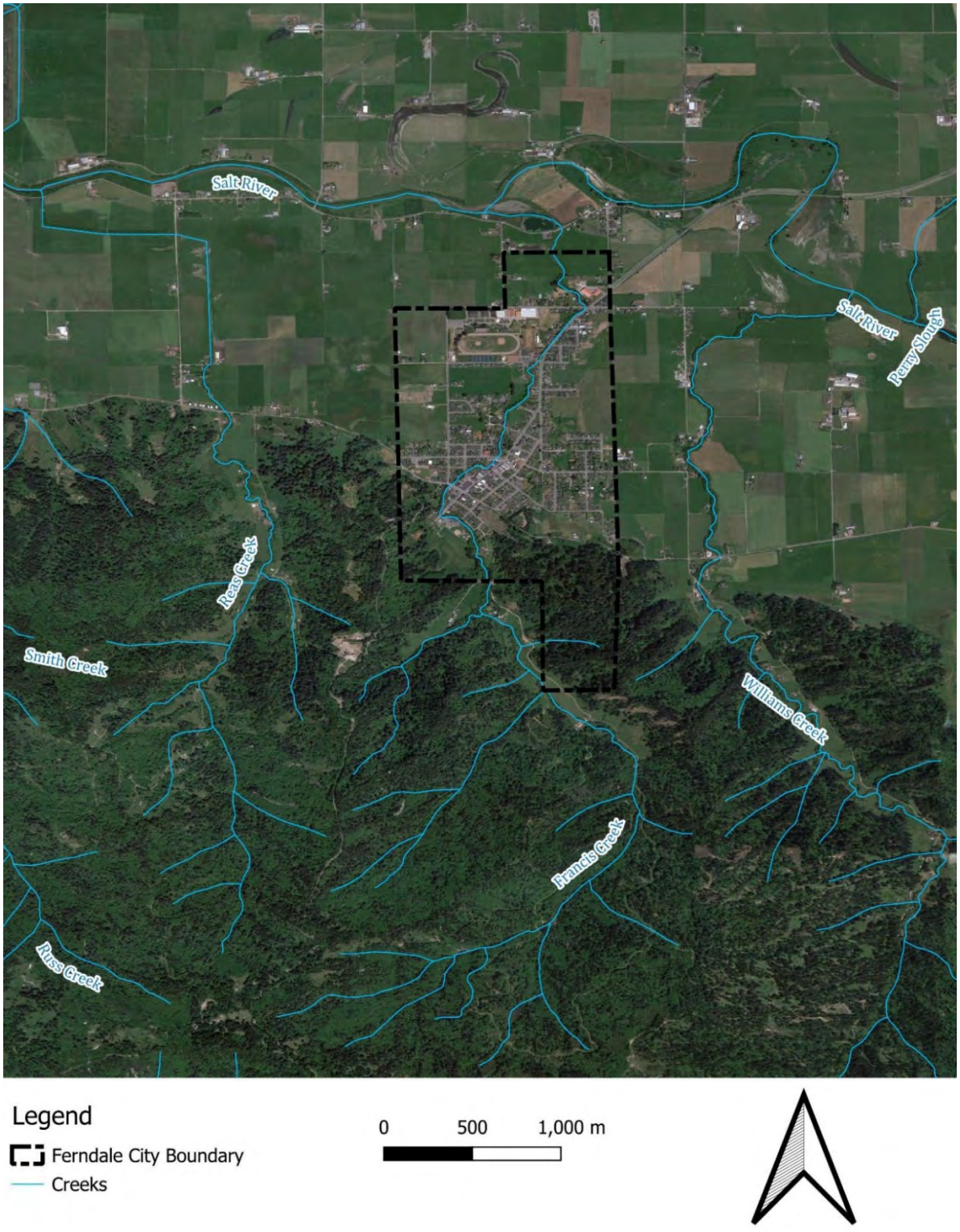
Located within the Planning Area is Reas Creek to the west, Francis Creek, which runs through the City, and Williams Creek running east of the City. Theres are all tributaries of the Salt River, which discharges into the Eel River at the river mouth. Each of these creeks are perennial streams with small watersheds, and stream flow quickly intensifies and subsides in these watersheds even during moderate rain events. Flooding events along each of these creeks occur periodically during large storm events. Figure 4.11-1 below shows the location of these creeks in relation to the City.

STORMWATER

The City's topography is generally flat, with less than a 5 percent grade. The nearby creeks and Francis Creek which bisects the City are shown in Figure 4.11-1 below. The stormwater drainage system is divided into east and west drainage basins separated by Francis Creek.

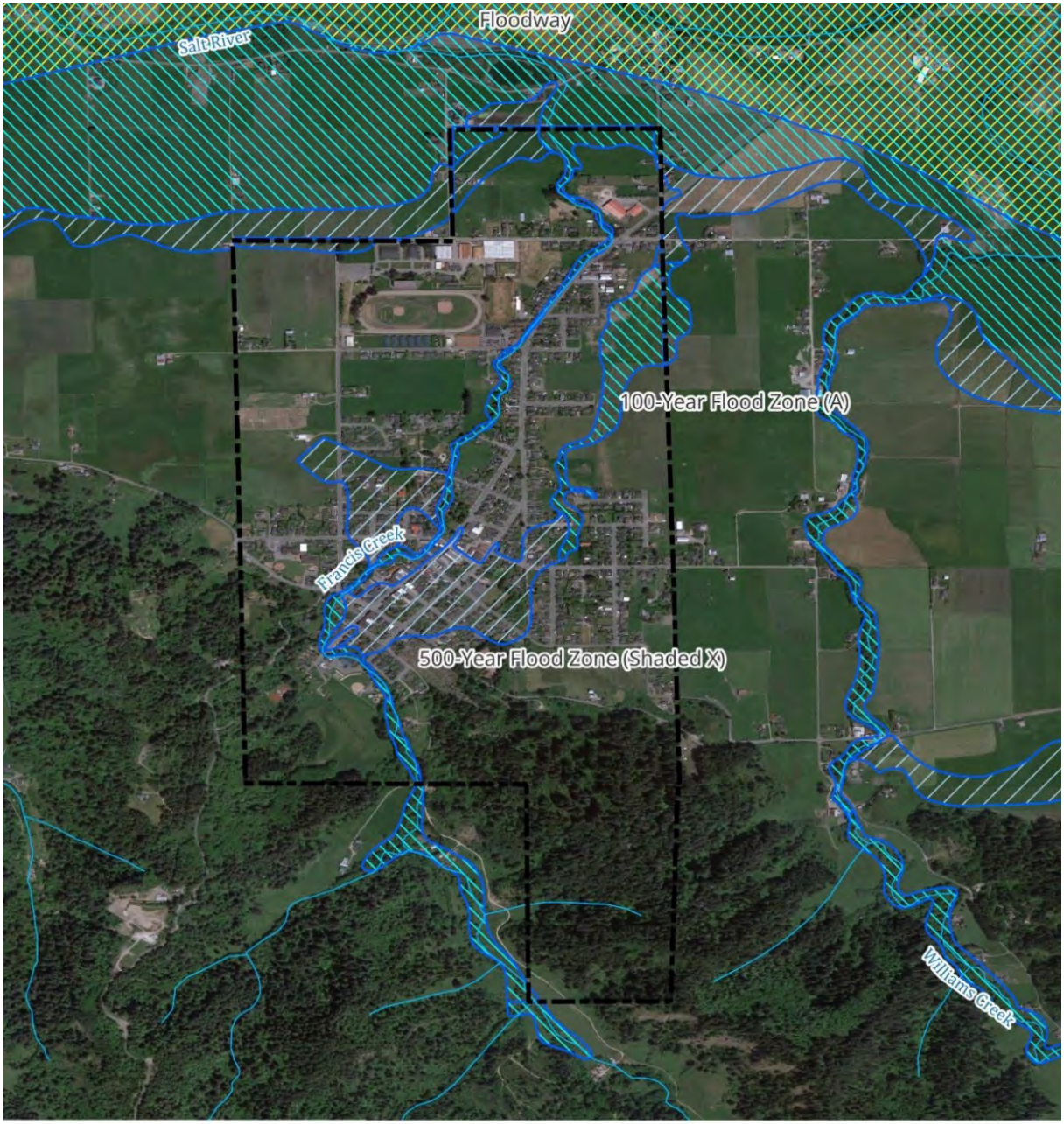
Stormwater from the City eventually flows into the Salt River to the north, following natural waterways and manmade features including drainage channels and detention basins. The City and its surrounding areas have been susceptible to chronic flooding and sedimentation issues, particularly during heavy winter rains due to the relatively flat terrain. This has become a concern both within the City and the rural areas near the Salt River to the north. Sediment eroding from the Wildcat Mountains directly south of Ferndale have been a significant contributor to local flooding issues by filling the creeks within and adjacent to the City with silt and reducing their capacity to carry storm runoff. Although flooding and sedimentation are natural occurrences, the frequency and intensity of sediment deposition have intensified due to human land use activities upland from the City (Humboldt County Groundwater Sustainability Agency, 2022).

Figure 4.11-1: Creeks in the Ferndale Planning Area



Source: Planwest Partners, 2023

Figure 4.11-2: Ferndale Flood Hazard Areas

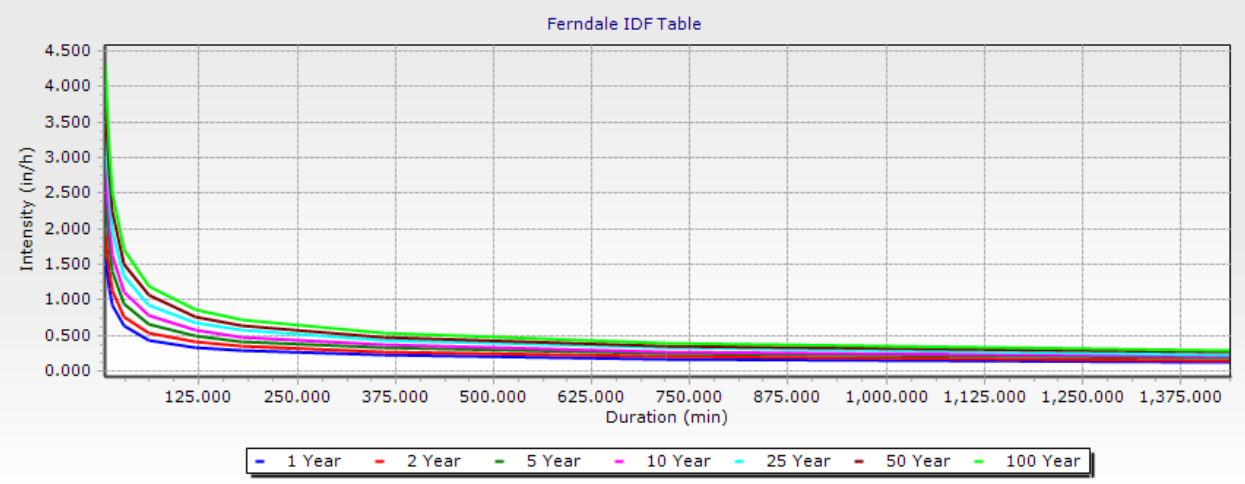


Source: Planwest Partners, 2023

The Federal Emergency Management Agency (FEMA) updated the Flood Insurance Rate Map (FIRM) for the City of Ferndale in June 2017 (Community Panel Number 06023C1184F). Francis Creek and Williams Creek to the east of the City have mapped flood hazard areas susceptible to 100-year (1 percent annual chance of occurrence) and 500-year floods (0.2 percent annual chance of occurrence) which are shown in Figure 4.11-2 below. Salt River to the north of Ferndale also has a mapped Floodway area. Each of these types of mapped flood hazard areas have a unique set of regulations for new development which is discussed in the Regulatory Setting section presented later in this chapter. For example, new development is prohibited within the mapped Floodway along Salt River while some development may be allowed in the mapped 100-year flood hazard areas along Francis Creek.

Figure 4.11-3 below shows the frequency and intensity of storms in Ferndale. As would be expected, rainfall intensity is highest with storms that only last a short time. Said another way, it may rain at a rate of 4.5 inches/hour for a short time but it's very unlikely to continue raining at that rate for long. The chart shows the intensity of rainfall expected at various intervals. Storms that normally occur each year are "1-Year" storms and are shown with a dark blue line at the bottom of the chart. More intense storm events that occur once every two years or more are shown in different colors.

Figure 4.11-3: Ferndale Rainfall Intensity Duration Frequency Chart



Source: Ferndale Drainage Master Plan Update, 2022

DRAINAGE

To accommodate expected growth, the City updated its Drainage Master Plan in 2022 which identifies and prioritizes drainage improvement projects to reduce flood hazards for homes and businesses in the City. To identify and correctly size specific drainage improvements needed to accommodate future development, the 2022 Master Drainage Plan update anticipates runoff from future development by assigning different values to the various General Plan land use designations as shown in Table 4.11-1 below. The table shows the runoff amount expected from future single-family residential development allowed in areas designated Residential Suburban (Runoff Coefficient "C" – 0.30) is considerably less than the runoff expected from new commercial development allowed in areas designated Community Commercial (Runoff Coefficient "C" = 0.95). This is because in commercial areas, new development covers more of the lot with impermeable surfaces (buildings and parking) than low-density single family residential development, which normally has more permeable surfaces (lawn areas and gardens and other landscaping) that allows rainwater to soak into the ground.

Table 4.11-1: Runoff Coefficients by Zoning Designation and Existing Uses

Abbreviation	Land Use Designation	Dwelling Units Per Acre	Runoff Coefficient "C"
R-S	Residential Suburban	0-1	0.30
R-1	Residential One-Family	0-7	0.75
R-1-B-1	Residential One-Family Building Site Combining	0-5	0.65
R-1-B-2	Residential One-Family Building Site Combining	0-4	0.60
R-1-B-3	Residential One-Family Building Site Combining	0-2	0.55
R-2	Residential Two-Family	0-14	0.75
R-3	Residential Multiple-Family	0-21	N/A
R-4	Apartment-Professional	0-21	0.80
C-1	Neighborhood Commercial	N/A	0.95
C-2	Community Commercial	N/A	0.95
A-E	Agricultural Exclusive	N/A	0.25
P-F	Public Facility	N/A	0.25-0.60
P	Pasture	N/A	0.20
F	Forest and Watershed	N/A	0.20
Cemetery	Local Cemetery	N/A	0.60
Road	Roadways and Driveways	N/A	0.95

Source: 2022 Drainage Master Plan Update

GROUNDWATER

Groundwater in the Eel River Valley Groundwater Basin (ERVGB) was extensively studied in a Groundwater Sustainability Plan (GSP) completed in 2022 with oversight from the Humboldt County Groundwater Sustainability Agency. The GSP is the source for the information in this section.

The ERVGB has a surface area of approximately 115 square miles and serves as the primary source of groundwater for Ferndale as well as the greater Eureka area. Groundwater is tapped in the lower eight miles of the Eel River Valley for agricultural, industrial, and domestic purposes as well as freshwater replenishment to surface waters. The river terrace deposits, comprising recent alluvium, contain aquifers which are hydraulically connected to Eel River which are recharged during high water events and heavy precipitation (North Coast California Regional Water Board, 2004).

There is no indication of significant land subsidence within the Basin resulting from the use of the aquifer by existing land users, and there are currently no known land subsidence monitoring programs in place. The predominant sediments within the aquifer are granular deposits. While certain areas in and around Ferndale contain thick silt and clay deposits, these areas are generally not utilized for groundwater extraction due to their inadequate water-bearing properties.

At a regional level, the Eel River and the ocean act as boundaries for the alluvial aquifer within the lower Eel River Valley. The ocean sets a physical limit on how far the groundwater elevation can fall, and the Eel River significantly influences the alluvial aquifer's base flow, resulting in stable groundwater levels in the aquifer. Monitoring wells

installed near the Eel River show a strong connection with river level changes (Humboldt County Groundwater Sustainability Agency, 2022).

There are approximately 12 municipal or agricultural wells and 219 domestic wells obtaining water from the basin with well yields of less than 1,200 gallons per minute (Humboldt County Planning and Building, 2017). The alluvial aquifer is unconfined and the most productive widely used aquifer within the basin, with shallow groundwater depths ranging from a few feet to 20 feet. Specific capacities range from 400 to 1,200 gallons per minute (gpm) and that range up to 600 gpm per foot of drawdown. The Carlotta formation underlies the alluvial aquifer, providing reliable additional water resources, although it is not as productive. West of Ferndale, wells drilled into the Carlotta Formation have been observed to yield 1,200 gpm while wells east of Ferndale can reach approximately 500 gpm (North Coast California Regional Water Board, 2004).

The existing maximum daily demand for domestic water use in the City is approximately 239,500 gallons per day, which accounts for approximately 66 percent of the source capacity of 362,000 gallons per day (K.M. Clark, personal communication, January 9th, 2024). Del Oro Water Company is a private water utility that manages and operates the water system for both the City and the surrounding unincorporated areas. The water company sources its water from three wells - High Line Springs, Low Line Springs, and the Van Ness Well located in the mountains directly south of the City. Currently, there are no known public health issues or limitations associated with the water system.

Figure 4.11-4: Map of Hydrologic Soils Groups in Ferndale



Soils within the Eel River Valley Basin are a product of weathering processes acting upon the geologic materials exposed at the ground surface. Their development and distribution are influenced by various factors, including the nature of the underlying geologic parent material, climatic conditions, vegetation, and topography. The soil characteristics play a vital role in the recharge of the regional groundwater aquifer, with permeability being a key factor. Areas with highly weathered or clay-rich soils generally exhibit low permeability, whereas unweathered granular soils tend to have high permeability.

Soil hydrologic groups are assessments of soil infiltration rates determined by the water-transmitting properties of the soil, which are directly related to the relative percentage of clay-to-sand and gravel present. The Natural Resources Conservation Service of the U.S. Department of Agriculture mapped the near-surface soils in Ferndale according to their permeability which is presented in Figure 4.11-5. The most permeable soils (Hydrologic Group B) are shown in green and are located in Russ Park in the southern part of the City. The rest of Ferndale has less permeable soils comprised of Hydrologic Groups C and D or combinations of Groups B/D and C/D.

When saturated, the hydraulic conductivity of near surface soils is an indicator of infiltration potential and, therefore, groundwater recharge potential from precipitation. Hydrologic soil groups are defined as follows:

- Group A – High Infiltration Rate: water is transmitted freely through the soil; soils typically have less than 10 percent clay and more than 90 percent sand or gravel.
- Group B – Moderate Infiltration Rate: water transmission through the soil is unimpeded; soils typically have between 10 and 20 percent clay and 50 to 90 percent sand.
- Group C – Slow Infiltration Rate: water transmission through the soil is somewhat restricted; soils typically have between 20 and 40 percent clay and less than 50 percent sand.
- Group D – Very Slow Infiltration Rate: water movement through the soil is restricted or very restricted; soils typically have greater than 40 percent clay, less than 50 percent sand.
- Groups A/D, B/D, or C/D – Soils are assigned dual hydrologic soil groups where the first letter is for drained areas and the second letter is for undrained areas.

The hydrologic soil groups in Ferndale generally correlate with moderate infiltration rates in other areas near the Eel and Van Duzen rivers—including Yager Creek and a large portion of the lower Eel River Valley north of Ferndale—and represent a high sand and gravel content. The Group B and B/D combination hydrologic soils represent significant aquifer recharge zones, especially when overlying and in direct contact with coarse sand and gravel associated with former river channels. Basin soils generally have more moderate infiltration potential near river channels and slower infiltration rates in the floodplains, elevated marine terraces (Rohnerville, Hydesville, and Table Bluff), and upland slopes surrounding the Basin.

WATER QUALITY

Nonpoint source pollution, also known as polluted runoff, is the leading cause of water quality impairments in California and the nation. Nonpoint sources, including natural sources, are the major contributors of pollution to impacted streams, lakes, wetlands, estuaries, marine waters, and ground water basins. Unlike pollution traceable to a single location or "point" (such as a wastewater treatment plant), nonpoint source pollution comes from many sources and is principally caused by stormwater, snowmelt, or agricultural runoff moving across and diffusing into the ground (Humboldt County Natural Resources and Hazards Report, Page 1-40, 2002). The runoff picks up natural and human pollutants and deposits them throughout the natural watershed in rivers, lakes, coastal areas, and aquifers.

Water within the Eel River Valley Groundwater Basin is generally of good quality and suitable for its intended uses. There are no known conditions of degradation of groundwater quality related to its management or use. The Basin has naturally occurring moderate to high concentrations of total dissolved solids (TDS), iron, manganese, and arsenic. The water quality trends for these constituents do not show any significant increase in measured concentrations.

The City of Fortuna, Del Oro Water Company, and Palmer Creek Community Services District all use filtration systems specifically designed to remove iron and manganese, which is a standard practice for water treatment. The municipal raw water data for water suppliers in the Basin do not show any exceedances of the secondary maximum contaminant levels for TDS or nitrate. Since 2002, arsenic has been detected in one water supply well at relatively steady concentrations below the maximum contaminant level (with the exception of one anomalous value). Arsenic was detected at depth (greater than 200 feet below ground surface) in six monitoring wells and is interpreted to represent an elevated background condition in deeper portions of the aquifer system (Humboldt County Groundwater Sustainability Agency, 2022).

The 2020 Water Quality report for Ferndale by Del Oro Water Company revealed Iron and Manganese were above the Secondary Drinking Water Regulation MCLs: The EPA has established National Secondary Drinking Water Regulations (NSDWRs) that set non-mandatory water quality standards for 15 contaminants. EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCLs. All other water quality tests indicate good water quality and were in compliance with established standards.

As mentioned previously, Francis Creek has been subject to frequent flooding for decades. Sediment deposition in the stream is one factor contributing to flooding because of reduced drainage capacity. This increased sedimentation also negatively impacts water quality by adding fine soils into the water. The Francis Creek Watershed has previously been identified as an “area of special concern” by the City due to water quality and quantity concerns associated with increased development near the source for the City’s water. Water quality threats include discharge from failing septic systems, non-point source pollution from rural residential, agriculture and timber production land uses, and turbidity from sediment discharge. Another concern is the cumulative effects of surface and groundwater withdrawals in rural areas where allowed land uses, if fully developed, may impact the availability of water for the City during low-precipitation years.

A Source Water Assessment was completed in May 2002, and found that sources are considered most vulnerable to the following activities not associated with any detected contaminants: 1. Septic Systems, 2. Transportation Corridors, 3. Streets and Roads, 4. Gas Stations, and 5. Auto Repairs (Del Oro Water Company, 2020). Water quality for the larger Lower Eel River watershed was also studied by the US Environmental Protection Agency (EPA) in their 2007 report, *Lower Eel River Total Maximum Daily Loads for Temperature and Sediment* (TMDL). That report identified two water quality considerations negatively impacting fish habitat in the watershed: increases in sedimentation and temperature. The TMDL report is further discussed in the Regulatory Setting section later in this chapter.

WASTEWATER TREATMENT

Ferndale’s sewer system was upgraded in 2011 from a biological lagoon that disinfected the City’s wastewater with chlorine, to a state-of-the-art system that employs aeration tanks, disk filters and ultraviolet technology. Ferndale’s wastewater treatment plant was the first tertiary wastewater treatment system in Humboldt County, which means the treated water being discharged into Francis Creek is high quality. Treating the wastewater with ultraviolet light means the City does not have to worry about any residual chlorine. The process also removes excess nitrogen and nutrients.

Wastewater flows from the municipal collection system by gravity to the headworks. Within the headworks, a comminutor and bar screen provide primary treatment. Wastewater from the headworks of up to 0.95 MGD is then pumped to a selector tank flowing by gravity to one of two rectangular extended aeration basins for biological treatment. From the aeration basins, wastewater flows by gravity to the adjacent rectangular clarifiers. Return activated sludge (RAS) is injected into the selector tank and aeration basins as appropriate to achieve maximum nitrogen removal efficiencies. Aerobically digested sludge is then pumped to a belt press for dewatering. The dewatered sludge is transported to the Humboldt County solid waste transfer station for disposal at a landfill.

Clarified wastewater undergoes disc filtration prior to ultraviolet disinfection. From October 1 through May 14, treated wastewater is discharged to Francis Creek at its confluence with the Salt River. From May 15 through September 30, treated wastewater for irrigation use is applied to neighboring agricultural land. Ferndale has been recycling its water since the new WWTF was completed in 2012. Facility improvement projects needed include:

reduced infiltration and inflow due to leaking pipes, which would address issues with the equalizing storage pond and the UV disinfection system, and establishment of a composting facility for the treatment of sludge rather than sending it to the landfill.

REGULATORY SETTING

FEDERAL

Safe Drinking Water Act

The federal Safe Drinking Water Act regulates drinking water quality nationwide and gives the federal Environmental Protection Agency (EPA) the authority to set drinking water standards, such as the National Primary Drinking Water regulations, which protect drinking water by limiting the levels of specific contaminants that can adversely affect public health. All public water systems that provide service to 25 or more individuals must meet these standards. Water purveyors must monitor for contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) is exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Contaminants include organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer, radionuclides (e.g., uranium and radon), and microbial contaminants (e.g., coliform and E. coli). The MCL list typically changes every three years as the EPA adds new contaminants or revises MCLs. The California Department of Public Health's Division of Drinking Water and Environmental Management is responsible for implementation of the Safe Drinking Water Act in California.

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the EPA authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions.

The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect water quality, such as dredging and filling wetlands. The CWA funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

Section 303 of the CWA requires states to adopt water quality standards (which include water quality objectives, beneficial uses, and anti-degradation policies) for navigable waters of the United States and to review and update those standards on a triennial basis. Section 303(d) requires identification of waterbodies that are not meeting water quality standards. These waterbodies are placed on the Section 303(d) List of Water Quality Limited Segments, also known as the 303(d) List of Impaired Water Bodies. The 303(d) List identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. Placement on this list generally triggers development of a pollution control plan called a Total Maximum Daily Load (TMDL) for each water body and associated pollutant/stressor on the list.

The TMDL process leads to a "pollution budget" designed to restore the health of a polluted body of water and provides a quantitative assessment of water quality problems, contributing sources of pollution, and the pollutant

load reductions or control actions needed to restore and protect the beneficial uses of an individual water body impaired from loading of a particular pollutant. More specifically, a TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for non-point sources, and natural background such that the capacity of the water body to assimilate pollutant loading (the loading capacity) is not exceeded. In other words, a TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, which will insure the protection of beneficial uses. This calculation also includes a margin of safety and consideration of seasonal variations. In addition, the TMDL contains the reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed.

The 1972 amendments to the Clean Water Act prohibit the discharge of pollutants to navigable waters from a point source unless the discharge is authorized by a National Pollution Discharge Elimination System (NPDES) permit (under Section 402 of the CWA). Industries that have direct stormwater discharges to navigable waters are required to obtain permits.

The California Regional Water Quality Control Board (RWQCB) is authorized to issue an NPDES permit for any stormwater outfall to the waters of the United States. The RWQCB requires that an NPDES Permit be obtained for construction grading activities for all projects greater than five acres: the limit dropped to one acre on 15 March 2003. This permit requires implementation of nonpoint source control of stormwater runoff through the application of a number of Best Management Practices (BMPs). These practices are meant to reduce the amount of constituents entering streams and other water bodies.

A BMP Program, as required by the RWQCB, describes stormwater management practices (structural and operational measures), to control the quantity and quality of stormwater runoff. Practices include onsite detention and treatment, reporting of spills, implementing “good housekeeping” techniques to reduce contamination of surface water, preventive maintenance, inspection and record-keeping, security measures, and employee training. A Spill Prevention Control and Countermeasure Plan is included in the program. If construction is scheduled to occur throughout the year or is unlikely to be restricted to the dry months of the year, the BMPs must be implemented to ensure that sediment is confined to the construction area and not transported off-site. Erosion control also is required by the City and County through general plan policies and permits.

The U.S. Army Corps of Engineers (ACOE) also has a role in administering the CWA. The ACOE requires a Section 404 Permit under the Clean Water Act for any alterations to wetlands.

National Flood Insurance Act

Congress acted to reduce the costs of disaster relief by passing the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief efforts by restricting development in floodplains. The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA publishes maps showing flood hazard areas in communities participating in the NFIP. Figure 4.11-2 presented earlier in this chapter shows the mapped flood hazard areas for Ferndale. The City maintains local storm drain facilities and is responsible for flood control planning within the City boundaries.

STATE

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act implements the CWA in California but also goes beyond the federal law in establishing water quality objectives for the State. These objectives are implemented locally through Water

Quality Control Plans and the NPDES permitting program. Discharges of wastewater and stormwater to Francis Creek and adjacent streams and rivers are regulated by these laws under a number of programs administered by the RWQCB.

The Water Quality Control Plan for the North Coast Region (Basin Plan) contains the regulations adopted by the RWQCB to control the discharge of waste and other controllable factors affecting the quality of waters of the state within the boundaries of the North Coast Region. The Porter-Cologne Act defines "Waters of the state" to mean any surface water or groundwater, including saline waters, within the boundaries of the state. This is an expanded view of the narrower focus of the CWA which requires only navigable waters to be protected.

The Basin Plan, as amended periodically, establishes the beneficial uses of water within the region; the water quality objectives necessary to protect those uses, including an antidegradation policy; the prohibitions, policies, and action plans, by which protections are implemented; and the monitoring program, which is designed to ensure attainment of water quality standards.

The Basin Plan includes two prohibitions specifically applicable to logging, construction, and other sediment-producing nonpoint source activities:

- the discharge of soil, silt, bark, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature into any stream or watercourse in the basin in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited; and
- the placing or disposal of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature at locations where such material could pass into any stream or watercourse in the basin in quantities which could be deleterious to fish, wildlife, or other beneficial uses is prohibited (NCRWQCB, 2007a)

The Basin Plan is adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Board), and the Office of Administrative Law (OAL). The United State Environmental Protection Agency (USEPA) approves the water quality standards contained in the Basin Plan, as required by the CWA.

The Basin Plan is used as a regulatory tool by the RWQCB. The Basin Plan is also used by other agencies such as the County Department of Health and Human Services in their permitting and resource management activities. Further, it serves as an educational and reference document for dischargers and members of the public.

The Regional Water Board separately regulates waste discharge from dairies under General Waste Discharge Requirements for Dairies in the North Coast Region (Dairy GWDR). The Dairy GWDR, adopted as Order No. R1-2019-0001 on August 15, 2019, protects the beneficial uses of both surface water and groundwater through a regulatory framework that requires enrolled dairies to develop and implement Water Quality Plans, Nutrient Management Plans, and Monitoring and Reporting Programs. Dairies not enrolled in the Dairy GWDR are required to obtain an individual permit.

State TMDLs for the Lower Eel River Watershed

As mentioned previously in the Environmental Setting section, the TMDLs implementing CWA requirements for the Lower Eel River watershed were approved by the EPA in 2007. This watershed is nearly 300 square-miles in area, which is composed of the Ferndale, Scotia, and Larabee Creek sub watersheds. It extends from the South Fork Eel River tributary of the mainstem Eel River to the ocean and includes all of the smaller tributaries including the creeks in and adjacent to the City. The TMDL report identifies several water quality objectives for the Lower Eel River watershed:

Table 4.11-2: Water Quality Objectives for the Lower Eel River Watershed

Parameter	Water Quality Objectives
Suspended Material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affects beneficial uses.
Settleable Material	Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface water shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Turbidity	Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such an alteration in temperature does not adversely affect beneficial uses.
Temperature	At no time or place shall the temperature of any COLD (water with a beneficial use of cold freshwater habitat) water be increased by more than 5˚F above natural receiving water temperature.

Source: EPA, Lower Eel River Total Maximum Daily Loads for Temperature and Sediment, 2007.

The narrative water quality standards described above focus on protecting the most sensitive beneficial uses (such as salmonid habitat) from adverse effects. In addition, at the discretion of the Regional Board, the narrative standards above allow for some increases in the pollutant loads over natural conditions, provided that the beneficial uses are not adversely affected (EPA, 2007).

Sustainable Groundwater Management Act

SGMA was passed by the California Legislature and signed by the Governor in September 2014, creating a new state-wide framework for groundwater resource management. Management responsibility under SGMA is delegated to the local level with state oversight by DWR and the State Water Board. SGMA established the following state policy of sustainable, local groundwater management (Water Code Section 113):

> "It is the policy of the state that groundwater resources be managed sustainably for long-term reliability and multiple economic, social and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science."

SGMA established Sections 10720-12934 in the Water Code and implementing regulations were adopted in 23 CCR Sections 350-358.4. The legislative intent of SGMA (Water Code Section 10720.1) is as follows:

a) To provide for the sustainable management of groundwater basins.
b) To enhance local management of groundwater consistent with rights to use or store groundwater and Section 2 of Article X of the California Constitution. It is the intent of the Legislature to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater.
c) To establish minimum standards for sustainable groundwater management.
d) To provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.
e) To avoid or minimize subsidence.

f) To improve data collection and understanding about groundwater.
g) To increase groundwater storage and remove impediments to recharge.
h) To manage groundwater basins through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner.

The fundamental goal of SGMA is to support beneficial uses of groundwater while avoiding undesirable results for six sustainability indicators: groundwater level declines, groundwater storage reductions, seawater intrusion, water quality degradation, land subsidence, and interconnected surface water depletion. The two fundamental approaches for eliminating overdraft conditions or undesirable results are supply augmentation and demand management.

SGMA contains mandatory compliance requirements for high- and medium-priority basins while actions for low- and very-low priority basins are voluntary. Where compliance is mandatory, a local agency must form a Groundwater Sustainability Agency (GSA) to fully cover the basin; prepare a Groundwater Sustainability Plan (GSP); implement the GSP and manage to achieve quantifiable objectives and sustainability no later than 20 years after GSP adoption. Also, groundwater monitoring; and perform annual monitoring and progress reporting to the Department of Water Resources and update the GSP every five years.

The Lower Eel River Watershed Groundwater Basin includes Ferndale and is the only medium or high priority groundwater basin in the County. As mentioned earlier in the Environmental Setting section of this chapter, a GSP was developed in 2022 under the oversight of the newly formed Humboldt County Groundwater Sustainability Agency. The GSP concludes the groundwater resource in the Basin is currently being managed sustainably. To ensure continued sustainability of the groundwater resource in the Basin for the next 20 years and beyond the GSP specifies the thresholds for groundwater quality and quantity to maintain beneficial uses in the area, including fish habitat. The GSP also identifies an annual monitoring program to make sure the thresholds continue to be met.

Streambed Alteration Agreements

The submission of a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game is normally required prior to the initiation of construction in a creek/stream channel such as Francis Creek. These agreements include requirements that protect water quality and protected species within and adjacent to creeks.

REGIONAL AND LOCAL

Humboldt County Critical Water Supply Area Designation

Through implementation of Policy WR-P4 of the Humboldt County General Plan the Board of Supervisors commits to designating some areas of the County “Critical Water Supply Areas” if cumulative impacts from land uses within the area have the potential to significantly impact the quality or quantity of municipal water supplies. The watershed providing water to the City may qualify for this designation as a “specific area, used by a municipality or community for its water supply system, which is so limited in area that it is susceptible to a potential risk of contamination from development activities”.

This designation could apply to specific areas within the Francis Creek watershed that may affect water quality of the water source utilized by the City for its public water system, which are at risk of potential contamination from development activities upstream of the public water intake facilities. When this policy is implemented, the County

is also directed to simultaneously adopt specific performance standards, including discretionary development conformance review, to safeguard the City's water resources.

City of Ferndale Drainage Master Plan

The City Council formed a Drainage Committee in 1989 to consider matters related to storm drainage within the City. In 1990 the City adopted a Drainage Master Plan which recognized the need to complete many major drainage improvements within the City limits. The Drainage Master Plan also recognized the limits imposed by both the Salt River and the Eel River estuary which influences drainage within the City. In 2004 and 2022 the City conducted comprehensive updates to the Drainage Master Plan. The 2022 update included a summary of drainage improvements made by the City and a hydrologic analysis of the City's drainage infrastructure based on the best available data. Based on this analysis, the update identified, prioritized and estimated the cost of a series of drainage improvement projects to help further alleviate drainage issues in and around the City. These projects are listed in Table 4.11-3 below.

Table 4.11-3: Recommended Drainage Improvement Projects from the 2022 Drainage Master Plan Update

Priority	Drainage Project Description
1	At Berding & Herbert Streets Replace (E) ±15"CMP pipe with 50't of New 24-inch HDPE pipe
2	At Berding St. & Shaw Ave. Install ±305' of 12-inch HDPE and drainage inlets.
3	At Dewey Ave. Install ±460' of 24-inch HDPE pipe and drainage Inlets from Herbert St. to the East Side Drainage Channel
4	At Rose Ave. Replace (E) 12" CMP with ±505' of 18-inch HDPE pipe. Will require obtaining easements and working in narrow areas. Estimated cost does not include the cost to acquire easements.
5	At 5th St. & Milky Way, Install ±550' of HDPE pipe from Milky Way to Drainage Channel with drainage inlets
6	At Ambrosini Lane, Install ±325' of 36-inch HDPE pipe. Will require obtaining easements.
7	At Arlington Ave at 5th St. Install ±1800' of 18-inch & 24-inch HDPE pipe from Arlington Ave. to Van Ness Ave.

Source: 2022 Drainage Master Plan Update

Floodplain Management Ordinance 08-02

In 2008 the City approved Ordinance 08-02 to minimize public and private losses due to flood conditions in specific areas. The ordinance includes provisions that do all the following:

- restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- control filling, grading, dredging, and other development which may increase flood damage; and
- prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

The ordinance requires all new residential and commercial development within the mapped 100-year Flood Hazard areas shown in Figure 4.11-2 to be elevated so the floors are at or above the base flood elevation.

Exceptions apply to commercial development which achieves the same practical effect. Due to the high velocities of flood water moving in mapped Floodway areas, development is largely prohibited in those areas. The ordinance does not regulate uses occurring within the mapped 500-year Flood Hazard areas, although the City may choose to avoid those areas for locating new essential service facilities such as structures and equipment needed to respond to major emergencies.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to hydrology and water quality from implementation of the Project would be significant if it would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin;
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i. result in substantial erosion or siltation on- or off-site;
    ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    iv. impede or redirect flood flows.
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation; or
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Items “a” and “c(i)” and are discussed together in Impact HYD-01, Degrade Water Quality or Exceed Waste Discharge Requirements, Item “b” is discussed in Impact HYD-02, Deplete Groundwater Supplies or Interfere With Groundwater Recharge, Items “c(ii)” and “c(iii)” are discussed in Impact HYD-03, Alter the Existing Drainage Patterns or Exceed the Capacity of Stormwater Drainage Systems, and Items “c(iv)” and “d” are discussed as part of Impact HYD-04, Increased Hazards from Floods. Impact HYD-05 discusses Item “e” - whether or not the Land Use and Safety Element Update will have any impacts on plans for water quality control and sustainable groundwater management. Impact assessment methodology considered streams and other watercourses, storm drainage information, the FEMA 100-year flood zone, and tsunami hazard area relative to the study area.

The analysis of potential hydrology and water quality impacts is programmatic rather than project-specific because the type of development being evaluated is potential development that may or may not occur in the future. Also, the current General Plan Housing Element indicates that Ferndale has a supply of land which can accommodate more new housing units than the expected high growth scenario of 85 units during the planning period. Given this, the evaluation of hydrology and water quality impacts in this EIR focuses on changes in the type of new development allowed by the proposed Land Use and Safety Element updates.

PROJECT IMPACTS AND MITIGATION

Impact HYD-01: Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality or result in substantial erosion or siltation on- or off-site?

Finding HYD-01: The Land Use and Safety Elements establish policies and implementation measures that would reduce the potential for construction and operation of projects implemented under the General Plan to degrade surface or ground water quality. Additionally, projects implemented under the General Plan would meet the City of Ferndale municipal code sections on grading, erosion, and sediment control to ensure proposed activities do not add new pollutants to waterways and reduce pollutant levels and sediments and comply with the Drainage Master Plan. The Land Use and Safety Element policies, municipal code standards, along with other State and Federal regulations would reduce water quality impacts to a less than significant level.

Development allowed under the Land Use and Safety Element Updates would result in impervious surfaces in the form of new structures, roadways, parking areas, and supporting infrastructure. New surfaces such as roofs; concrete or asphalt sidewalks, parking lots or roads; as well as areas of compacted soil would likely be impervious to rainwater. Stormwater moves over impervious surfaces and collects natural and human generated substances such as sediment, nutrients, and trace metals, and carries them to the drainage system and eventually to wetlands, streams, rivers, and coastal waterways. Impervious surfaces increase the amount of stormwater runoff and impede or prevent the natural percolation of rainwater into the soil, which could result in higher levels of mobilized sediment and other pollutants entering receiving water bodies as a nonpoint source pollutant.

Projected growth during the planning period may result in the use of materials and substances that could impair water quality. Land use activities could involve the storage and handling of materials and substances such as automotive fluids, fertilizers, and household cleaners that, if used improperly, could be mobilized by stormwater and impair water quality. Sediment sources, besides construction sources noted above, could include landslides, roads and parking lots, unprotected slopes, and disturbed areas. Organic compound sources derive from automotive fluids on roads and parking areas, pesticides and herbicides. Nutrients include fertilizer in lawns and gardens, food waste, discharges from septic and sewer systems, and sediment. Trace metals sources include oil and grease, compounds on roads and parking lots, roofing, construction sites, and industrial and commercial uses.

New development under the Land Use and Safety Element Updates would involve construction activities which typically involve soil disturbance resulting from grading, excavating and trenching within a project site. Stormwater runoff from construction sites can contain sediments mobilized due to these activities. Spills or leaks from heavy equipment and machinery, staging areas, or building sites can also enter runoff. Typical pollutants may include petroleum products and heavy metals from equipment, and construction materials such as paints, solvents, and cleaning agents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials may degrade water quality if runoff containing the sediment enters receiving waters in sufficient quantities to exceed water quality objectives.

Analysis of Changes to the Policies and Implementation Measures

The Land Use Element Update's policies increase the allowable density within the existing development pattern of the City either through increases in the maximum density allowed or by encouraging infill development. In an

analysis comparing the stormwater runoff between lower and higher density development, the US EPA found that "with more dense development, runoff rates per house decrease by approximately 74 percent from the least dense scenario; for the same amount of development, denser development produces less runoff and less impervious cover than low-density development; and for a given amount of growth, lower-density development uses more of the watershed" (Protecting Water Resources with Higher-Density Development, US EPA Report 231-R-06-001, Findings/Discussion page 26).

Policies and Implementation Programs of the proposed Land Use Element promote higher densities in infill areas consistent with the protection of water quality in the EPA report described above. All of the following proposed Policies and Programs will reduce the water quality impacts and reduce erosion or siltation on- or off-site resulting from the new development needed to accommodate projected growth in the region:

> Policy LU-1.4 – Residential Infill encourages the infilling and completion of residential neighborhoods to take full advantage of available public services including drainage facilities. Placing new development within areas already developed with existing roads, sidewalks and buildings will minimize the conversion of open space to developed uses thereby reducing the impact of new development on water quality.
>
> Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.
>
> Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.
>
> Policy LU-2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.

The following policies of the Land Use Element promote conservation of existing agricultural lands, timberlands and open space areas. This has the effect of limiting new development in undisturbed areas which will also reduce the Project's water quality impacts and reduce the potential for erosion or siltation on- or off-site.

> Policy LU-3.1, Conservation, encourages existing open space and agricultural land at the edges of and surrounding the City to be preserved to protect natural resources which will also protect water quality.
>
> Policy LU-4.3, Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.
>
> Policy LU-3.5, Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.
>
> Policy LU-4.1, Russ Park Stewardship, requires the City to manage Russ Park for trails, habitat biodiversity, and stable soils in collaboration with local, regional, and state agencies.
>
> Policy LU-3.4, Francis Creek Corridor continues the existing General Plan protections for the Francis Creek riparian corridor, "The Francis Creek riparian corridor shall be maintained or improved to permit natural

flow where possible, prevent flooding in developed areas, and maintain natural habitat uses where appropriate." Protecting and enhancing the vegetative buffer between new development and the stream channel will act as a filter for stormwater runoff from developed areas resulting in improved water quality in the creek.

Policy LU-4.2 enhances the existing Plan policy protecting the riparian habitat along Francis Creek.

Implementation Measure LU-IP2, Zoning Code Updates, continues the existing implementation framework to consider establishing a Francis Creek corridor streamside protection zone in the Zoning Ordinance. A timeframe of two years is specified for this implementation measure.

The implementation program for protecting the Francis Creek riparian corridor is enhanced by a new program, LU-IP6: Stream Set Back Standards, which calls for establishing a stream setback requirement for new development along designated waterways within the City including Francis Creek. The setback may be reduced if specific evidence is provided showing there will be no impact to the waterway. A timeframe of two years is also specified for implementing this measure.

Finally, the Land Use Element policies and implementation programs listed below will directly reduce impacts to water quality from soil erosion and release of pollutants into waterways by avoiding flooding and drainage problems in newly developed areas:

Policy LU-1.7 – Planned Development is intended to address stormwater drainage for proposed development of two large vacant properties including APN 030-091-030.

Policy LU-3.2 – Improve Drainage broadly directs the City to incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding.

Policy LU-3.3 – Manage Flood Plains requires new development be protected and protect others from flooding.

Policy LU-3.6 – Funding directs the City to develop a program and pursue funding to coordinate acquisition of important open space property for drainage easements.

Implementation Program LU-IP4: Drainage Infrastructure Funding directs the City to fund stormwater drainage projects for erosion control, retention, and detention facilities to alleviate flooding within the City.

Implementation Program LU-IP5: Drainage Master Plan Priorities commits the City to review Drainage Master Plan priority projects every five years to maintain an up-to-date list for guiding drainage improvements and seeking funding opportunities.

The Safety Element is intended to provide an overview of potential hazards in the City and decrease the risk to life and property from those hazards. Its Policies and Implementation Programs reduce water quality impacts from new development in three ways:

- Minimizing risk from geologic hazards will reduce potential for water quality impacts from soil erosion associated with slope failure.
- Encouraging flood protection and adequate drainage facilities for new development will reduce impacts to water quality caused by soil erosion and release of pollutants into waterways when flooding occurs in newly developed areas.

- Other target-specific measures to reduce water quality impacts due to pollution from other sources.

The paragraphs below describe these Policies and Programs in the Safety Element.

Minimize Risk from Geologic Hazards

Policy 1.2 requires geotechnical evaluation for development projects with the potential for geological hazards, such as slope failures or soil subsidence. This evaluation will provide recommendations to reduce or eliminate the risk of geologic hazards which will be requirements for project construction. Implementation Program 1.a specifically requires development applications for projects on slopes of 30 percent or more to submit a geologic investigation report by a qualified engineering geologist.

Policy 1.4 encourages improved drainage, plant soil-stabilizing vegetation, and structural reinforcements for new development in landslide-prone areas.

Implementation Program 1.b prohibits new development on excessively steep hillsides where slope stability mitigations are not deemed feasible by the City Engineer and where a significant hazard to Ferndale residents may result.

Implementation Program 1.c requires mitigation actions for slope stability in areas with landslide areas, this can include, with affected property owner support, landslide repair extending beyond the boundaries of a proposed development project site. This program also encourages planting of native vegetation on unstable slopes to protect structures at lower elevations.

Requirements for Flood Protection and Adequate Drainage

Policy 2.7 requires development in areas subject to flooding to minimize or eliminate flooding hazards.

Policy 2.8 encourages development to balance or enhance the natural landscape features of a site to reduce impervious surfaces.

Policy 2.9 requires new development to utilize flood control methods that are consistent with Regional Water Quality Control Board Policies and Best Management Practices.

Implementation Program 2.d ensures that local regulations comply with FEMA standards for flood protection.

Implementation Program 2.f commits the City to request the County refer development projects located within the City's watersheds to the City for comment and to continue to comment on County projects with the potential to increase runoff and flood hazards within the City. It also commits the City to standardize mitigation requirements to offset cumulative impacts of individual projects with potential to increase runoff and flood hazards within the City.

Implementation Program 2.i commits the City to constructing protective levees surrounding at-risk facilities.

Program 2.j involves performing preventative maintenance to maintain flow capacity of Francis Creek.

With Program 2.k the City will identify areas subject to flooding and provide informational brochures on the City's website that 1) identify best practices to reduce potential property damage from flooding, and 2) document flooding emergency evacuation procedures.

Program 2.l requires review of development plans of existing sites to ensure necessary upgrades are provided to the City's storm drainage system.

Program 2.m requires review of new development proposals to ensure that structures designed for human occupancy are accessible during and protected from a 100-year storm by elevating lowest habitable floor one foot above the floodplain.

Program 2.n requires a drainage study for new development in the 100-year floodplain to ensure adequate protection and no net increase in downstream flood hazards.

Program 2.o requires that all development comply with Regional Water Quality Control Board discharge permit requirements.

Program 5.g prohibits the siting of new hazardous waste repositories, incinerators, and facilities within the 100-year floodplain.

Other Programs that Protect Water Quality

Program 4.c requires Russ Park be designated as a natural resource area to protect the area from potential development and deforestation.

Program 5.a requires that all land uses that generate, use, handle, store, dispose of, and/or emit hazardous materials or waste be in compliance with applicable laws and regulations.

Analysis of Changes to the Land Use Map

The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. In general, proposed increases in the allowed density during the planning period is not expected to result in significant impacts on water quality and waste discharge because proposed Land Use and Safety Element policies and implementation programs described earlier in this section will directly reduce impacts to water quality from soil erosion and release of pollutants into waterways by avoiding flooding and drainage problems in newly developed area.

Implementing the Land Use and Safety Element updates is not anticipated to degrade water quality or violate any waste discharge requirements. These actions may allow increased amounts of residential and commercial development in specific areas. Proposed Land Use Element policies encourage infill which are intended to allow new development in areas where development already occurs and where public services and infrastructure is available to accommodate the new development. Specific land use changes encourage new development in infill areas and/or may require discretionary permits for new development which would further evaluate and mitigate potential environmental impacts if necessary.

The Land Use and Safety Elements establish policies and implementation measures that would reduce the potential for construction and operation of projects implemented under the General Plan to degrade surface or ground water quality. Additionally, projects implemented under the General Plan would meet the City of Ferndale municipal code sections on grading, erosion, and sediment control to ensure proposed activities do not add new pollutants to waterways and reduce pollutant levels and sediments. The Land Use and Safety Element policies, municipal code standards, along with other State and Federal regulations would reduce water quality impacts to a less than significant level.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HYD-02: Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

Finding HYD-02: New development allowed by the proposed policies and implementation measures in the Land Use Element will not have a significant impact on groundwater supplies needed to accommodate future growth in the City or interfere substantially with groundwater recharge. This impact is considered less than significant.

Development allowed under the Land Use and Safety Element Updates would result in impervious surfaces in the form of new structures, roadways, parking areas, and supporting infrastructure. New surfaces such as roofs; concrete or asphalt sidewalks, parking lots or roads; as well as areas of compacted soil would likely be impervious to rainwater. Stormwater moves over impervious surfaces rather than recharging subsurface groundwater aquifers. While the City sources its domestic water supply upslope of the City and is not dependent on groundwater for its water supply, adjacent land uses, particularly nearby farms and dairies require groundwater for their operation.

Analysis of Changes to the Policies and Implementation Measures

The Land Use Element Update's policies increase the allowable density of the existing development pattern within the City either through increases in the maximum density allowed or by encouraging infill development in areas served by the City's water system. As detailed in the discussion of Impact HYD-01 above, Policies LU-1.4, LU-2.1, LU-2.6 and LU-2.7 all encourage new development in infill areas. According to Del Oro Water Company, the City has sufficient capacity remaining to accommodate the development anticipated during the General Plan planning period of 2045. The source and supply of water is adequate to meet Ferndale's planned growth, see Section 4.20 (Utilities and Service Systems) for additional information.

The act of updating the Land Use and Safety Elements and implementing those changes through adoption of zoning regulations is not anticipated to affect groundwater supplies or groundwater recharge. However, these actions may allow future development activities that could potentially involve direct and indirect impacts by allowing increased amounts of residential and commercial development in specific areas. The proposed Land Use and Safety Elements contain policies and implementation programs that will reduce potential impacts of new development on groundwater by increasing the amount of drainage retained on-site which will recharge underground aquifers.

Furthermore, the proposed policies of the Land Use Element that promote conservation of existing agricultural lands, timberlands and open space areas will help maintain these areas in their natural conditions which will maintain their ability to recharge groundwater supplies in the area. Policies LU-3.1, LU-3.5, LU-4.1 and LU-4.3 described earlier in this Chapter are examples of these. Policy LU-3.2 will directly enhance groundwater recharge in newly developed areas by increasing onsite detention in new developments. And Safety Element Policy 2.8 supplements this effort by encouraging natural landscape features of newly developed sites to reduce impervious

surfaces. Accordingly, new development allowed by the proposed policies and implementation measures in the Land Use Element will not have a significant impact on groundwater supplies needed to accommodate future growth in the City or interfere substantially with groundwater recharge.

Analysis of Changes to the Land Use Map

The proposed changes to the Land Use map shown in Figure 3-5 and described in Table 3-4 of Chapter 3 all occur in areas served by the City's water system so they will not require groundwater for development to occur. New development occurring in these areas will not impact groundwater recharge because either 1) the map change reflects the existing use of the site and no new development is expected to occur, or 2) new development on these properties will be subject to Policy LU-3.2 which directly enhances groundwater recharge in newly developed areas by increasing onsite detention in new developments. Safety Element Policy 2.8 also applies to this new development which encourages natural landscape features of newly developed sites to reduce impervious surfaces which will serve to minimize the impacts of new development on groundwater recharge.

Aside from the proposed Land Use and Safety Element policies and implementation programs that reduce the Project's impacts on groundwater supplies, the City also supports maintaining the sustainability of groundwater supplies in the area under the Groundwater Sustainability Agency (GSA) and conforming to the recommendations and implementation measures of the Groundwater Sustainability Plan (GSP). The GSP outlines quantifiable objectives that emphasize sustainability, including groundwater monitoring and progress reporting to the Department of Water Resources and updating the GSP every five years. The 2022 GSP for the Lower Eel River Watershed Groundwater Basin which includes Ferndale, concludes the groundwater resource in the Basin is currently being managed sustainably. Due to the adequate water supply to serve new development, the General Plan policies and implementation measures discussed above, and State and federal regulations, unsustainable groundwater management would not occur. The impact would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact HYD-03: Would the Project Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- **i. result in substantial erosion or siltation on- or off-site;**
- **ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**
- **iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**
- **iv. impede or redirect flood flows?**

Finding HYD-03: The Land Use and Safety Elements establish policies and implementation measures that reduce the potential for projects implemented under the General Plan to substantially increase the rate or amount of surface runoff or exceed the capacity of stormwater drainage systems. Additionally, projects

implemented under the General Plan would meet the City of Ferndale municipal code sections for surface water, stormwater, and floodplain management. The Land Use and Safety Element policies, municipal code standards, along with other State and Federal regulations and Mitigation Measure HYD-01 would reduce impacts to a less than significant level.

Development allowed under the Land Use and Safety Element Updates would result in impervious surfaces in the form of new structures, roadways, parking areas, and supporting infrastructure. New surfaces such as roofs; concrete or asphalt sidewalks, parking lots or roads; as well as areas of compacted soil would likely be impervious to rainwater. Stormwater moves over impervious surfaces and is directed to the City's drainage system and eventually to wetlands, streams, rivers, and waterways. Impervious surfaces increase the amount of stormwater runoff and impede or prevent the natural percolation of rainwater into the soil, which could result in higher levels of drainage entering receiving water bodies.

Analysis of Changes to the Policies and Implementation Measures

The Land Use Element Update's policies increase the allowable density of the existing development pattern within the City either through increases in the maximum density allowed or by encouraging infill development. As described earlier in the discussion of Impact HYD-01, a 2006 report by the US EPA found that higher density development results in less runoff per housing unit than development occurring at lesser densities. Policies LU-1.4, LU-2.1, LU-2.6 and LU-2.7 all encourage new development in infill areas.

The proposed policies of the Land Use Element that promote conservation of existing agricultural lands, timberlands and open space areas will help maintain these areas in their natural undisturbed condition which will also reduce the Project's impacts on drainage. Policies LU-3.1, LU-3.5, LU-4.1 and LU-4.3 described earlier in this Chapter all serve to reduce drainage impacts of the Project through open space conservation.

The Land Use and Safety Elements also contains policies and implementation programs to directly reduce drainage impacts in newly developed areas:

- Policy LU-1.7 – Planned Development is intended to address stormwater drainage for proposed development of two large vacant properties.
- Policy LU-3.2 – Improve Drainage, broadly directs the City to incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding.
- Policy LU-3.6 – Funding, directs the City to develop a program and pursue funding to coordinate acquisition of important open space property for drainage easements.
- Implementation Program LU-IP4: Drainage Infrastructure Funding, directs the City to fund stormwater drainage projects for erosion control, retention, and detention facilities to alleviate flooding within the City.
- Implementation Program LU-IP5: Drainage Master Plan Priorities, commits the City to review Drainage Master Plan priority projects every five years to maintain an up-to-date list for guiding drainage improvements and seeking funding opportunities.
- Safety Element Policy 2.7 requires development in areas subject to flooding to minimize or eliminate flooding hazards.
- Safety Element Policy 2.8 encourages natural landscape features of newly developed sites to reduce impervious surfaces.

- Safety Element Policy 2.9 requires new development to utilize flood control methods that are consistent with Regional Water Quality Control Board Policies and Best Management Practices.

Analysis of Changes to the Land Use Map

The proposed changes to the Land Use map shown in Figure 3-5 and described in Table 3-4 of Chapter 3 will not substantially alter drainage patterns because either 1) the map change reflects the existing use of the site and no new development is expected to occur, or 2) new development on these properties will be subject to the above policies and implementation measures which directly reduces drainage impacts in newly developed areas by increasing onsite detention in new developments and improving the existing drainage system. Safety Element Policy 2.8 also applies to this new development which encourages natural landscape features of newly developed sites to reduce impervious surfaces which will serve to minimize the impacts of new development on drainage.

The City's Drainage Master Plan and proposed general plan policies minimize increases in stormwater runoff, flooding and erosion. The proposed land use changes would not be expected to substantially increase on- or off-site flooding given that post construction run-off should primarily be detained onsite in compliance with City, County, and Regional Water Board storm water requirements. The locations of proposed new infill development, the policies listed above, and state and federal regulations would reduce the potential for the construction and operation of projects implemented under the general plan 2045 to create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant with the implementation of mitigation measure HYD-01.

MITIGATION MEASURE

Mitigation Measure HYD-01: Add the following *italicized* text to Land Use Element Policy LU-3.2:

Policy LU-3.2 – Improve Drainage: Incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding. *The quality of runoff from urban and suburban development shall be improved through use of appropriate and feasible Best Management Practices (BMPs) including, but not limited to, bioretention basins, artificial wetlands, grassy swales, oil/grit separators, with an emphasis on a Low Impact Development approach to stormwater management.*

a) New development shall be required to minimize increases in stormwater peak flows and/or volume, to the extent feasible.
b) New development projects shall be designed to minimize drainage concentrations, maximize permeable surfaces, and maintain, to the extent feasible, natural site drainage conditions.

SIGNIFICANCE AFTER MITIGATION

Less than significant.

Impact HYD-04: Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

Finding HYD-04: The Land Use and Safety Elements establish policies and implementation measures that limit development in floodplains and reduce potential flood hazards caused by impeding or redirecting flood flows. Additionally, projects implemented under the General Plan would meet the City of Ferndale municipal code sections for surface water, stormwater, and floodplain management. The Land Use and Safety Element policies, municipal code standards, along with other State and Federal regulations would reduce impacts to a less than significant level.

Development allowed under the Land Use and Safety Element Updates would result in impervious surfaces in the form of new structures, roadways, parking areas, and supporting infrastructure. New surfaces such as roofs; concrete or asphalt sidewalks, parking lots or roads; as well as areas of compacted soil would likely be impervious to rainwater. Stormwater moves over impervious surfaces and is directed by the City's drainage system and eventually to wetlands, streams, rivers, and waterways. Impervious surfaces increase the amount of stormwater runoff, resulting in higher levels of drainage entering receiving water bodies. During flooding events, this increased runoff could exacerbate existing flood hazards or could potentially increase flood hazards in other areas by redirecting stormwater. The City is not within tsunami or seiche zones, however a tsunami hazard area is located north of the City boundary.

Analysis of Changes to the Policies and Implementation Measures and Changes to the Land Use Map

As mentioned previously in this chapter, the Land Use Element Update's policies increase the density of the existing development pattern of the City either through increases in the maximum density allowed or by encouraging infill development. As described earlier in the discussion of Impact HYD-01, a 2006 report by the US EPA found that higher density development results in less runoff per housing unit than development occurring at lesser densities. By reducing the overall amount of runoff from new development accommodating projected growth, the policies encouraging infill development reduce the potential for runoff to be redirected during flooding events. Policies LU-1.4, LU-2.1, LU-2.6 and LU-2.7 all encourage new development in infill areas.

The proposed policies of the Land Use Element that promote conservation of existing agricultural lands, timberlands and open space areas will help maintain these areas in their natural undisturbed condition which will also reduce the Project's impacts on flooding. Policies LU-3.1, LU-3.5, LU-4.1 and LU-4.3 described earlier in this Chapter all serve to reduce flooding impacts of the Project through open space conservation.

Also, the Land Use Element contains policies and implementation programs to directly reduce drainage impacts in newly developed areas which will help reduce the potential for runoff to be redirected during flooding events:

- Policy LU-1.7 – Planned Development, is intended to address stormwater drainage for proposed development of two large vacant properties including APN 030-091-030 with a development potential of 107 new units.
- Policy LU-3.2 – Improve Drainage, broadly directs the City to incorporate drainage improvements and low impact development in all areas of the City to increase onsite retention and reduce flooding.
- Policy LU-3.6 – Funding, directs the City to develop a program and pursue funding to coordinate acquisition of important open space property for drainage easements.

- Implementation Program LU-IP4: Drainage Infrastructure Funding, directs the City to fund stormwater drainage projects for erosion control, retention, and detention facilities to alleviate flooding within the City.
- Implementation Program LU-IP5: Drainage Master Plan Priorities, commits the City to review Drainage Master Plan priority projects every five years to maintain an up-to-date list for guiding drainage improvements and seeking funding opportunities.
- Safety Element Policy 2.8 encourages natural landscape features of newly developed sites to reduce impervious surfaces.

Finally, the Safety Element contains Implementation Program 2n which requires a drainage study for new development in the 100-year floodplain to ensure adequate protection and no net increase in downstream flood hazards. This measure directly reduces potential for new development to cause flooding hazards by redirecting stormwater flows.

The areas in the City subject to flood hazards are shown in Figure 4.11-2. The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Portions of the City are within FEMA 100-year flood zones and there is existing development within these flood hazard areas. Projected development without controls or mitigation, could result in minor to moderate increases in flooding and put additional people and structures at risk from flooding. Development within a floodplain could impede or redirect the flow of water. Safety Element policies and implementation programs require the City continue to participate in the national flood insurance program (Policy 2.1), requires development in areas subject to flooding to minimize or eliminate the exposure of people and property flooding hazards (Policy 2.7), and to utilize flood control methods that are consistent with Regional Water Quality Control Board policies and best management practices (Policy 2.9). The Land Use and Safety Elements establish policies and implementation measures that limit development in floodplains and reduce potential flood hazards caused by impeding or redirecting flood flows. Additionally, projects implemented under the General Plan would meet the City of Ferndale municipal code sections for surface water, stormwater, and floodplain management and would not increase the risk of pollutant release due to project inundation. The Land Use and Safety Element policies, municipal code standards, along with other State and Federal regulations would reduce impacts to a less than significant level

MITIGATION MEASURE

No mitigation measures are required.

Impact HYD-05: Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Finding HYD-05: The policies and implementation measures of the Land Use and Safety Elements protect water quality and groundwater resources. They are consistent with and compliment implementation of the applicable water quality control plan and sustainable groundwater management plan. This impact is considered less than significant.

As discussed in more detail previously, the policies and implementation programs of the Land Use Element Update guide future growth in the City, and the land use map identifies areas for development of residential and commercial land uses, as well as roads and other infrastructure, to accommodate forecasted population growth. The Safety Element provides an overview of potential hazards in the City and directs policies and implementation programs for decreasing those hazards so there is a lower risk to life and property.

Analysis of Changes to the Policies and Implementation Measures and Changes to the Land Use Map

The Water Quality Control Plan for the North Coast Region (Basin Plan) adopted by the RWQCB controls the discharge of waste and other controllable factors affecting the quality of waters of the North Coast Region including the City of Ferndale. The Basin Plan's requirements resulted in the City overhauling its sewer treatment facility in 2011. It now uses an advanced system that employs aeration tanks, disk filters and ultraviolet technology to treat the City's wastewater before being discharged into Francis Creek. New development under the proposed Land Use and Safety Element updates will be served by the same advanced wastewater collection, treatment, and disposal facilities as the existing housing stock.

Future development involving grading activities of one acre or more will also be subject to National Pollutant Discharge Elimination System (NPDES) Permits. The developer must file a Notice of Intent with the RWQCB and obtain a General Construction Activity Stormwater Permit pursuant to regulations established under the Basin Plan. This permit requires preparation and implementation of a Stormwater Pullulation Prevention Plan, which is intended to prevent degradation of surface and groundwaters during the grading and construction process. Implementation Program 2.0 of the Safety Element requires new development to comply with the RWQCB discharge permit requirements. Based on the above analysis, the proposed Land Use and Safety Element Updates are consistent with and would not obstruct implementation of the Basin Plan.

In 2022 the Humboldt County Groundwater Sustainability Agency developed the Groundwater Sustainability Plan (GSP) for the Lower Eel River Watershed Groundwater Basin and will be managing groundwater in the basin for the foreseeable future. The GSP, which includes Ferndale, identifies policies and implementation programs to achieve quantifiable objectives and maintain sustainability, monitor groundwater levels, annually report on progress to the Department of Water Resources and be updated every five years.

The GSP reports that municipal drinking water sources are responsible for only 12 percent of the groundwater used in the basin while agricultural irrigation is responsible for 85 percent of the groundwater used. The City's water supply comes from two springs and one well located upslope in the southern portion of the City. The 2022 GSP concludes the groundwater resource in the Basin is currently being managed sustainably and that groundwater use in the basin could increase by 100 percent before restrictions would be needed. Based on this analysis, the development allowed by the proposed Land Use and Safety Element Updates are consistent with and would not obstruct implementation of the GSP.

MITIGATION MEASURE

No mitigation measures are required.

Bibliography

California Water Boards North Coast - R1. (2023). *An Introduction to the Basin Plan*. Retrieved from California Water Boards: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/

Del Oro Water Company. (2020). *2020 Water Quality Report.* Retrieved from CPUC: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/water-division/reports/consumer-confidence-reports/2020/2020-ccr_dowc-ferndale.pdf

EPA. (2007, September). *Lower Eel River Total maximum Daily loads for Temperature and Sediment.* Retrieved from California Water Boards: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/eel_river_lower/

Humboldt County Groundwater Sustainability Agency. (2022). *Eel River Valley Groundwater Sustainability Plan.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/103631/ERVB-GSP-final-1-29-2022

Humboldt County Planning and Building. (2017). *Humboldt County General Plan Update Final EIR.* Retrieved from Humboldt County: https://humboldtgov.org/626/Draft-Environmental-Impact-Report-EIR

Humboldt LAFCO. (2018). *City of Ferndale Municipal Service Review.* Retrieved from HUmboldt LAFCO: http://humboldtlafco.org/wp-content/uploads/City-of-Ferndale-MSR-SOI_Adopted-11-14-18.pdf

Manhard Consulting. (2012). *Ferndale Wastewater Treatment Plant.* Retrieved from Manhard Consulting: https://www.manhard.com/wp-content/uploads/2014/06/Wastewater-Treatment-Facility.pdf

North Coast California Regional Water Board. (2004). *Eel River Valley Groundwater Basin.* Retrieved from California Water Boards: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/1_010_EelRiverValley.pdf

North Coast Regional Water Quality Control Board. (2018). *Water Quality Control plan for the North Coast Region.* Retrieved from California Water Boards: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/190204/Final%20Basin%20Plan_20180620_lmb.pdf

Planwest Partners and O&A. (2022). *Drainage Master Plan Update - City of Ferndale.*

Stillwater Sciences. (2021). *Eel River Valley GDE Assessment.* Retrieved from California Water Library: https://h8b186.p3cdn2.secureserver.net/wp-content/uploads/2022/05/PT-2-Pages-from-ERVB-GSP-final-1-29-2022-2.pdf

Tam, D. (2010, August 2). Ferndale starts construction on wastewater treatment plant. *The Times Standard*. Retrieved from https://www.times-standard.com/2010/08/02/ferndale-starts-construction-on-wastewater-treatment-plant/

The Times Standard. (2012, April 18). Ferndale dedicates new sewer plant; wastewater plant first of its kind in Humboldt County, water officials say. *The Times Standard*. Retrieved from https://www.times-standard.com/2012/04/18/ferndale-dedicates-new-sewer-plant-wastewater-plant-first-of-its-kind-in-humboldt-county-water-officials-say/

4.12 LAND USE AND PLANNING

This section summarizes land use characteristics such as development patterns and major land use types and analyzes the land use and planning impacts from implementation of the Project. Existing land use, population, and housing conditions are further described in Chapter 3, Project Description, and the 2019 Housing Element.

ENVIRONMENTAL SETTING

EXISTING DEVELOPMENT PATTERNS AND LAND USES

Since the City's European-American settlement in 1852 by a small group of people searching for fertile farmland, Ferndale has grown to a population of nearly 1,400 within an area of approximately one square mile. This historic town, noted for its preserved Victorian style architecture, has a unique setting that provides small-town rural living benefits while maintaining access to nearby City services.

The City sits on the edge of the vast Eel River floodplain that is approximately two miles wide as it nears the Pacific Ocean. The majority of land use surrounding the City, as designated in the Humboldt County General Plan, is agricultural and agricultural exclusive with some timber production to the southeast. Land uses in and around Ferndale reflect rural living characteristics. There are large parcels of pastureland surrounding single family homes on moderately sized lots.

The City of Ferndale was designated as a State Historic Landmark (No. 883) in 1975 by the California State Parks Office of Historic Preservation. In addition, Ferndale's Main Street Historic District was established in 1994 by the National Park Service and placed on the National Register of Historic Places. Main Street (State Route 211) runs diagonally through the City from the northeast to the southwest, terminating near the base of Wildcat ridge. It is the town center and home to the main commercial district from Fern Avenue to Eugene Street. The designated historic district includes buildings from Shaw Avenue to Eugene Street. In public outreach for the Land Use and Safety Element updates, community members described this area as a central gathering place and location of activity for most community events. The Milton Avenue Business District, located at the north end of the City along Main Street at Milton Avenue, is viewed as the secondary commercial district in the City. This is the location of the old Central Creamery which has been repurposed as office space and commercial uses.

The City is also home to the Humboldt County Fairgrounds, located at the north end of the City between Van Ness Avenue and Arlington Avenue. It is the location of many community and County-wide events, including the annual County Fair going back to 1896. The Humboldt County fairgrounds offers livestock shows, horse racing during the fair, and various events throughout the year.

Ferndale has historically been an agriculturally based community due to its history as one of the leading creamery areas in the state. The Eel River valley and flood plain has large areas of fertile land well suited for agriculture. Much of the area surrounding Ferndale is coastal agricultural land and the economic well-being of the region remains linked to dairy and other agricultural operations on the Ferndale bottoms. Community members have also expressed their desire to maintain and protect agriculture as it is a defining regional characteristic. The surrounding open pastureland lends to the rural atmosphere of the City and provides residents with a strong connection to the land. Limited agricultural uses still exist within the City limits including small orchards, feed crops, and individual lot-based food production and animal husbandry.

The Francis Creek Watershed includes a portion of the City and surrounding land upstream into forested areas to the south. Francis Creek generally flows south to north through the City and divides the area into eastern and western drainage areas. The creek flows to its confluence with the Salt River, which is a tributary to the Eel River

near the mouth on the coastline. Francis Creek is a perennial stream with a small watershed, and stream flow quickly subsides after moderate rain events. Flooding events can occur periodically during large storm events.

The Salt River Restoration Project, in progress since 2013, is restoring tidal marshlands, clearing overgrown vegetation, and increasing surface water flows to improve sediment transport. Since Francis Creek is a Salt River tributary, it is important to ensure that land uses in the watershed do not impair water quality or increase sediment runoff.

To the south of Ferndale are abundant hills and valleys including the Francis, Reas, and Williams Creek watersheds. These areas were historically used for upland grazing of cattle and timber production. Areas currently outside of the City boundary can directly impact areas within the City along ecological corridors. The City will continue to work with the County on programs that encourage continued use of these lands for agriculture and timber production to help reduce potential impacts from development.

REGULATORY SETTING

FEDERAL

Federal Aviation Administration

A Military Operating Area (MOA) is a designated segment of airspace where military aircraft conduct training exercises and operations (14 CFR §1.1, U.S.A.). MOAs are a form of special use airspace (SUA), different from restricted or prohibited airspace, and are used for military maneuvers. They're marked on charts, including operational hours, altitudes, and contact information. MOAs are typically located in remote areas to mitigate noise and safety concerns. Local flight service facilities maintain MOA details, serving to ensure safe airspace usage and segregation of military activities from civilian aviation. According to the Humboldt County WebGIS[1], the nearest MOA is approximately 10 miles to the southwest of Ferndale and is not impacted by the proposed Land Use and Safety Element updates.

STATE

California Government Code

California Government Code Section 65300 regulates the substantive and topical requirements of general plans. State law requires each city and county to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." The California Supreme Court has called the general plan the "constitution for future development." The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private.

California Government Code Section 65301 requires a general plan to address the geographic territory of the local jurisdiction and any other territory outside its boundaries that bears relation to the planning of the jurisdiction. The jurisdiction may exercise their own judgment in determining what areas outside of its boundaries to include in the Planning Area. The State of California General Plan Guidelines state that the Planning Area for a city should include (at minimum) all land within the city limits and all land within the Sphere of Influence where the city could expand into. Ferndale does not identify any area as a Sphere of Influence, although it describes the Planning Area as the area within approximately 0.5 miles of the City boundary.

[1] https://webgis.co.humboldt.ca.us/HCEGIS2.0/ accessed January 26, 2024

Cortese Knox Hertzberg Local Government Reorganization Act of 2000

The Cortese Knox Hertzberg Local Government Reorganization Act of 2000 (Cortese-Knox Act) represents a significant overhaul of local government reorganization law, marking a pivotal reform since the 1963 statute that established Local Agency Formation Commissions (LAFCos) in each county. This legislation, in California Government Code Section 56000 et seq., outlines procedures for various local government changes, including city incorporation, annexation to a city or special district, and the consolidation of cities or special districts.

The Cortese-Knox Act grants LAFCos specific powers, particularly in acting on local agency boundary changes and adopting spheres of influence for local agencies. LAFCos play an important role in regional planning matters. The Act requires LAFCOs adopt policies and procedures that "encourages and provides planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open-space and agricultural lands within those patterns."

The Cortese-Knox Act also mandates regular updates of spheres of influence for cities and special districts, accompanied by municipal services reviews that assess service needs, resource utilization, and possibilities for collaboration. Pursuant to Government Code Section 56430, Humboldt LAFCo conducts municipal service reviews for each agency under its jurisdiction. The municipal service reviews provide an in-depth look at provider service needs, use of resources, and possibilities for partnership with other agencies; and contain determinations that serve as guidelines to inform and support the LAFCo's decisions about Spheres of Influence.

California Complete Streets Act (California Assembly Bill 1358)

The California Complete Streets Act of 2008, also known as California Assembly Bill 1358, is legislation that promotes the design and operation of roadways to accommodate the needs of all users, including pedestrians, bicyclists, transit riders, and motorists. Enacted in 2008, this law requires local jurisdictions to adopt policies that consider the needs of all modes of transportation in street planning and design. It encourages the development of safe, accessible, and convenient transportation options for diverse users, fostering a more inclusive and sustainable approach to urban and transportation planning to accommodate the needs of all users in California. This includes motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation.

Government Code Section 65302(g); Safety Element Updates

Section 65302(g) of the California Government Code requires jurisdictions to update the Safety Element of their General Plans to do all the following:

- Protect the community from risks associated with a variety of hazards, including seismic activity, landslides, flooding, and wildfire (65302(g)(1)).
- Map and assess the risk associated with flood hazards, develop policies to minimize the flood risk to new development and essential public facilities, and establish effective working relationships among agencies with flood protection responsibilities, as required by California Government Code Section 65302(g)(2).
- Map and assess the risk associated with wildfire hazards, develop policies to reduce the wildfire risk to new land uses and essential facilities, ensure there is adequate road and water infrastructure to respond to wildfire emergencies, and establish cooperative relationships with wildfire protection agencies, as required by California Government Code Section 63502(g)(3).
- Assess the risks associated with climate change on local assets, populations, and resources. Note existing and planned development in at-risk areas and identify agencies responsible for providing public health and safety and environmental protection. Develop goals, policies, and objectives to reduce the risks

associated with climate change impacts, including locating new public facilities outside of at- risk areas, providing adequate infrastructure in at-risk areas, and supporting natural infrastructure for climate adaptation, as required by California Government Code Section 65302(g)(4).

- Identify residential developments in any hazard area identified that does not have at least two emergency evacuation routes, as required by California Government Code Section 65302(g)(5).

Government Code Sections 65302.6 and 8685.9; Local Hazard Mitigation Plan

AB 2140 was passed into law in 2006 (Gov. Code § 65302.6, 8685.9). These sections address federal requirements mandating that jurisdictions have a valid hazard mitigation plan to be eligible for certain grants. Specifically, Section 8685.9 limits the State of California to paying no more than 75 percent of disaster relief funds not covered by FEMA to a local community, unless the affected community has a valid hazard mitigation plan that is consistent with the federal Disaster Management Act of 2000 and unless the community has adopted the hazard mitigation plan as part of its general plan. For those jurisdictions the State may pay for more than 75 percent of the disaster relief funds not covered by FEMA. Section 65302.6 authorizes local communities to adopt hazard mitigation plans as part of their safety element or a comparable section of their general plan.

State of California Emergency Plan

The State of California Emergency Plan (SEP) serves as a comprehensive guide for preparing, mitigating, responding to, and recovering from emergencies, whether natural or human-caused (Cal OES, 2024). Mandated by the California Emergency Services Act (ESA), the plan outlines key aspects, including methods for conducting emergency operations, the mutual aid process, roles and responsibilities of state government agencies, Emergency Support and Recovery Support Functions, resource mobilization, public communication, continuity of government, mitigation programs, emergency planning, response operations, recovery operations, Emergency Operation Plan development and maintenance, and the integration of individuals with Access and Functional Needs alongside whole community planning. It provides a structured framework for effective emergency management in the state.

REGIONAL

Humboldt County Regional Housing Needs Assessment Plan

The 2019 Humboldt County Regional Housing Needs Assessment Plan (RHNP), developed by the Humboldt County Association of Governments (HCAOG), serves to allocate the projected housing needs in the region among cities and the county (HCAOG, 2019). It distributes, by income category, each jurisdiction's "fair share" of anticipated housing needs from December 31, 2018, to August 31, 2027, and is the 6th iteration since requirement began in 1981. Housing allocations outlined in the RHNP are integral elements of Housing Element updates which must be accommodated by the Land Use Element for both the County and the seven cities within Humboldt County. While cities and counties are not obligated to construct housing designated by the RHNA process, it represents a distribution of housing capacity that each jurisdiction must plan for during the specified period.

Humboldt Regional Bicycle Plan

This Humboldt Regional Bicycle Plan from 2018 is designed to streamline projects and programs aimed at creating a comprehensive bikeway system for the Humboldt region. Its primary goal is to establish a safe, convenient, and practical cycling infrastructure that caters to the transportation needs of both residents and visitors across Humboldt County (HCAOG, 2018). The plan prioritizes key infrastructure projects that strategically connect bicycle routes in adjoining jurisdictions, fostering the development of an expansive regional bicycle network. With its proposed projects and programs, the Bike Plan has the capacity to significantly boost the number of bicycle trips throughout Humboldt County (Humboldt County Association of Governments (HCAOG), 2018).

Regional Transportation Plan Update

The 2022-2042 Regional Transportation Plan, known as Variety in Rural Options of Mobility (VROOM), serves as HCAOG's long-term strategy for the evolution and upkeep of the regional transportation system over the next 20 years (HCAOG, 2022). Within VROOM, specific elements such as "Complete Streets," "Commuter Trails," and "Public Transit" outline policies and initiatives geared towards promoting bicycle transportation and fostering intermodal connections. Additionally, the plan incorporates the Regional Bicycle Plan by reference, seamlessly integrating efforts to enhance the overall regional transportation network.

Humboldt County Regional Trails Master Plan

The 2010 Regional Trails Master Plan adopts a holistic perspective on planning non-motorized transportation, emphasizing connectivity between communities (Planwest Partners, 2010). This comprehensive plan encompasses various "active transportation" modes, including bicycle, pedestrian, and equestrian travel, with a focus on facilitating commuting, utilitarian, and recreational trips through the development of a well-connected regional trail network.

Humboldt County Regional Pedestrian Plan

The Humboldt County Pedestrian Plan serves as a guiding document for the future development of pedestrian infrastructure in the county, with the goal of making walking a central and safe mode of transportation (Alta Planning and Design, 2008). Developed in 2008 from collaborative input from the public, local jurisdictions, and an assessment of existing conditions, the plan focuses on proposing enhancements to the pedestrian network to create safe and comfortable walking environments.

The Pedestrian Plan was the culmination of a large effort by local residents who have actively advocated for improved pedestrian facilities through various organizations promoting non-motorized transportation alternatives. These grassroots efforts, involving organizations such as Tri-County Independent Living, Area 1 Agency for Aging, Senior Resource Center, Lighthouse for the Blind, Humboldt Partnership for Active Living, Trails Trust of Humboldt Bay, and Green Wheels, have contributed to trail development, supported the expansion of the Hammond Coastal Trail, and participated in efforts to improve pedestrian facilities.

Particulate Matter (PM10) Attainment Plan

The North Coast Unified Air Quality Management District (NCUAQMD), covering Humboldt, Del Norte, and Trinity Counties, is designated as a non-attainment area for particulate matter under 10 microns (PM10). As per the California Clean Air Act, the NCUAQMD is tasked with developing control measures to achieve and maintain ambient air quality standards (NCUAQMD, 2024). In its 1995 Particulate Matter (PM10) Attainment Plan, the NCUAQMD has identified specific control measures, emphasizing programs to facilitate pedestrian and bicycle use, along with advocating for land use development practices that encourage walking to diverse destinations and reduce reliance on automobiles.

Eel River Valley Groundwater Sustainability Plan

The final Eel River Valley Groundwater Sustainability Plan (GSP) released in 2022 establishes a comprehensive framework for the sustainable management of groundwater resources in the Basin, aiming to achieve economic, social, and environmental benefits through local control (Humboldt County, 2022). Drawing on empirical data, stakeholder input, computer simulations, and geological interpretation, the GSP tailors its management approach to current conditions and community interests. In contrast, the Groundwater Sustainability Plan Alternative (GSP Alternative), which preceded the GSP, sought to demonstrate the Eel River Basin's sustained operation within its sustainable yield for over a decade, complying with regulations (SHN Consulting Engineers & Geologists, Inc, 2016).. Although the GSP Alternative aimed to fulfill the objectives of a comprehensive GSP without the need for

a Groundwater Sustainability Agency, it faced disapproval from the Department of Water Resources in 2019. The disapproval stemmed from the absence of established management criteria for ten years, a lack of a quantitative estimate of sustainable yield, and insufficient quantification of the impacts of groundwater use on surface water systems.

Salt River Ecosystem Restoration Project

The Salt River Ecosystem Restoration Project is a comprehensive, collaborative effort spanning multiple years and involving various agencies and landowners to address drainage issues in the Salt River Watershed. The Humboldt County Resource Conservation District (HCRCD) leads this multi-agency, landowner-driven initiative, with support from the Salt River Watershed Council (SRWC), a community-based nonprofit that provides a long-term monitoring and management structure for the project. Additionally, HCRCD oversees project management, facilitates relations among involved agencies and property owners, and secures funding, including channel restoration for lower Francis Creek and improvements on Williams, Coffee, and Reas creeks (Planwest Partners, 2013).

Triggered by recurring flooding, diminished drainage capacity, and sediment deposition negatively impacting water quality and agriculture, the project includes a substantial tidal wetland restoration component aimed at enhancing the estuary system's health and optimizing river hydrology. Proposing an ecosystem-wide, watershed-scale approach, the project addresses complex land management and ecological issues contributing to reduced agricultural productivity and ecological decline. With a predominant public-private partnership, most restoration activities are planned for privately owned and actively managed agricultural land. Multiple public and private entities have committed significant financial and professional support to realize the vision of restoring hydrologic processes and functions to the Salt River watershed. The project comprises four main components: 1) Salt River channel and riparian floodplain restoration, 2) tidal marsh restoration at Riverside Ranch, 3) sediment management in the channel and riparian floodplain, and 4) upslope sediment reduction.

Humboldt County Operational Area (Local) Hazard Mitigation Plan (LHMP)

The LHMP serves as a comprehensive guide to identify and profile hazard conditions, analyze risk to people and facilities, and develop mitigation actions to reduce or eliminate hazard risks in Humboldt County and in incorporated jurisdictions within the County. Initially established in 2007 and updated periodically, the plan involves collaboration with cities and special purpose districts to identify strategies for minimizing risks associated with natural hazards. The 2019 update was driven by several objectives, including compliance with the Disaster Mitigation Act, ensuring eligibility for federal grant funding, meeting state and federal requirements, conducting a risk assessment for local hazards, and aligning with FEMA's Community Rating System. The plan aims to facilitate coordinated efforts among planning partners, ensuring the funding and implementation of high-priority projects to mitigate potential disaster impacts.

The LHMP and Safety Element address similar issues, but the Safety Element provides a higher-level framework and set of policies while the LHMP focuses on more specific mitigation actions. Assembly Bill (AB) 2140 adopted in 2006 includes provisions for what should be included in the LHMP and allows California counties and cities to adopt a current FEMA approved LHMP into the Safety Element of the General Plan, making a jurisdiction fully eligible for public assistance funding through the California Disaster Assistance Act. The LHMP focuses on mitigation related actions while the Safety Element also includes policy related to emergency response recovery and preparation activities. Humboldt County has adopted and incorporated by reference the Hazard Mitigation Plan which was approved by the California Governor’s Office of Emergency Services (Cal OES) and submitted to

the Federal Emergency Management Agency (FEMA) for approval. FEMA determined the Hazard Mitigation Plan was eligible for approval.

The LHMP can be found here: https://humboldtgov.org/3011/County-Emergency-Plans.

Humboldt County Emergency Operations Plan (EOP)

The Humboldt County Emergency Operations Plan (EOP) created in 2015 serves as a comprehensive framework for coordinating the response efforts of agencies within the Humboldt Operational Area during emergencies necessitating multiagency collaboration or the activation of the County Emergency Operations Center (EOC) (Humboldt County, 2020). Specifically tailored to address a range of emergency scenarios, including natural disasters, technological incidents, and human-caused disasters within or affecting Humboldt County, the plan achieves several important objectives. It establishes the emergency management organization essential for mitigating significant emergencies and disasters in the region. Additionally, the EOP identifies the policies, responsibilities, and procedures for safeguarding the health, safety, and environment of Humboldt County communities during emergencies. The plan also outlines operational concepts and procedures for field response, County EOC activities, and the recovery process.

Designed to implement the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) for Humboldt County within the California Office of Emergency Services (Cal OES) Mutual Aid Region II, the plan aims to facilitate multiagency and multijurisdictional coordination. It encourages collaboration between Humboldt County and local governments, special districts, and state agencies in emergency operations. While primarily operational, the document also serves as a valuable planning reference. Departments within the County of Humboldt and local governments with identified roles and responsibilities in the plan are encouraged to develop their emergency operations plans, detailed standard operating procedures, and emergency response checklists based on the provisions outlined in the EOP.

Humboldt County Integrated Waste Management Plan

The Humboldt County Integrated Waste Management Plan is a comprehensive strategy managed by the Humboldt Waste Management Authority (HWMA) and collectively adopted by the cities in the county (Humboldt County, 1995). In compliance with California general plan law and the Integrated Waste Management Act, the plan encompasses various elements, including Source Reduction and Recycling, Household Hazardous Waste, Countywide Siting, Non-Disposal Facility, and Integration Summary (Humboldt County, 2017). These elements address program plans, education, funding, organization, safe disposal of hazardous wastes, landfill capacity needs, areas suitable for landfill development, long-term facility requirements for recycling and composting, and an overall summary of goals and objectives for integrated waste management in the county. The plan provides a cohesive and sustainable approach to waste management for Humboldt County.

Humboldt County Hazardous Materials Area Plan

The 2008 Humboldt County Hazardous Materials Area Plan is a comprehensive framework that outlines policies, responsibilities, and procedures crucial for safeguarding the health and safety of Humboldt County's residents, the environment, and public/private property in hazardous materials incidents (Humboldt County, 2017). Developed by Humboldt County Environmental Health, the plan incorporates a hazard analysis identifying facilities and transportation routes posing a risk of hazardous materials release during storage, handling, and transportation. Vulnerable populations are also pinpointed concerning their proximity to acutely hazardous materials (AHM) and bulk storage facilities, detailed in Appendices A through C.

This plan not only establishes an emergency response organization for hazardous materials incidents in Humboldt County but was also instrumental in crafting the Humboldt Operational Area Hazard Mitigation Plan and the Humboldt County Emergency Operations Plan. The collaborative efforts of the County of Humboldt, County of Del Norte, and cities within both counties (excluding Fortuna) constitute the Humboldt-Del Norte Hazardous Materials Response Joint Powers Authority (HazMat JPA), formed in 1995. Through quarterly meetings, the HazMat JPA provides sustained funding for the 12-member HazMat Team. Each jurisdiction contributes proportionally, based on population, to cover the Team's ongoing expenses. With a history of securing over $200,000 in grants for training and equipment, the HazMat Team continues to receive approximately $60,000 annually in funding from the JPA. The operational concepts and procedures associated with the HazMat Team are also delineated in the Hazardous Materials Area Plan.

Humboldt County Community Wildfire Protection Plan

The Humboldt County Community Wildfire Protection Plan (CWPP) provides a local framework for collaborative wildfire risk mitigation, overseen by the Humboldt County Fire Safe Council (FSC) (Humboldt County Fire Safe Council, 2019). Updated every five years in adherence to Healthy Forests Restoration Act (HFRA) standards, the CWPP is a dynamic tool actively used by stakeholders. The 2019 CWPP, in its third edition, represents two years of collaboration among diverse entities within the Humboldt County FSC, fostering engagement with local fire departments, agencies, and the public. Since 2006, this plan has guided strategic efforts, securing funding for projects to prepare communities for the impacts of wildfires. Certification of the 2019 CWPP, meeting HFRA criteria, signifies alignment among key entities, reinforcing its status as a dynamic and relevant strategy for enhancing community and ecosystem resilience to wildfires. The plan's purpose extends beyond documentation; it actively informs and guides efforts across six critical goal areas: Wildfire Ignition Prevention, Wildfire Preparedness, Disaster Preparedness, Fire Protection, Restoration of Beneficial Fire, and Integrated Planning.

Pavement Management Program Update

The Pavement Management Program (PMP) is an effort from 2021 by the Regional Transportation Planning Agency (RTPA) and the Service Authority for Freeway Emergencies (SAFE) to inform policymakers about the current pavement network condition and assess the impact of various funding scenarios on future conditions (NCE, 2021). The RTPA consists of Humboldt County Association of Governments (HCAOG), a Joint Powers Agency comprising seven incorporated cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad), and the County of Humboldt. The objectives of the PMP included updating the pavement inventory, conducting condition surveys, revising maintenance records, updating decision trees and costs, performing budgetary analyses, and compiling a comprehensive PMP report documenting the update results. It was last updated in 2021/2022.

LOCAL

Ferndale General Plan

The City's General Plan was first adopted in 1967 and included a Land Use, Transportation and Public Facilities Element. A Noise Element was prepared in 1975 and an update to it was drafted in 2016 but it was not adopted.

The Land Use Element was updated in 1986. It was also expanded to include a chapter titled "General Provisions" that describes how the Plan is intended to be used and maintained, and another chapter - a "Unique Resources Element" - which describes goals and policies for protecting the riparian corridor along Francis Creek and maintaining the agricultural and forest resource uses within and surrounding the City.

The Land Use Element consists of three components: (1) a collection of goals and policies providing guidance for land use decisions; (2) a series of land use designations specifying permitted/planned land uses' type, density, and

development standards; and (3) a General Plan Land Use Map or Diagram showing the distribution of permitted/planned land uses based on land use designations. The City's primary land uses are comprised of single-family residential areas, agricultural zones, commercial spaces along Main Street, and public/open spaces as shown in Figure 3-6 (page 16 of Chapter 3).

The number of acres in each land use designation of the 1986 Land Use Element and proposed Land Use Element is shown in Table 4.12-1 below:

Table 4.12-1: Summary of Current and Proposed Land Use

		Existing		Proposed	
Land Use/ Zoning Designation	**Abbreviation**	**Acreage**	**% of Total**	**Acreage**	**% of Total**
Agricultural Exclusive	AE	219	31.3	206	29.4
Neighborhood Commercial	C1	5	0.7	10	1.5
Community Commercial	C2	23	3.3	22	3.2
Agricultural Commercial	C-AG	5	0.8	0	0
Natural Resource	NR	0	0	112	16.1
Public Facility	PF	194	27.7	82	11.6
Residential Low Density	R-1	215	30.8	224	32.1
Residential Medium Density	R-2	18	2.5	42	6
Residential High Density*	R-3	0	0	0	0
Apartment Professional	R-4	0.5	0.1	0	0
Residential Suburban	R-S	19	2.8	0	0
Total		**698**	**100%**	**698**	**100%**

The Land Use Element also includes specific goals for protecting the existing land uses adjacent to the City which are described as the Francis Creek Watershed, Coastal Agriculture and Upland Forest and Grazing areas.

An Historic and Cultural Resources Element was added to the General Plan in 2012. The purpose of the Historical & Cultural Resources Element is to preserve and enhance the community's historic resources for heritage tourism, economic development and a continued source of community identity and pride. The Element also addresses new development to ensure compatibility with existing historical resources and encourages both public and private stewardship. It is a long-term plan to integrate historic preservation within the context of land use development.

The Housing Element of the General Plan was first adopted in 1992 and has been periodically updated since then. The most recent Housing Element Update was approved by the City Council in 2019. The Housing Element has several key objectives which underpin key parts of the draft Land Use Element:

- Designate sufficient land at appropriate densities with development standards to support appropriate housing creation for all income groups and household types;
- Maintain and Improve Public Infrastructure;
- Support Housing Equity for All Ferndale Residents; and
- Preserve and Improve Affordable and Market Rate Housing.

Ferndale Municipal Ordinances

Zoning Ordinance 02-02 is a regulatory framework that builds upon and clarifies the Land Use Element. It establishes zones where certain uses are allowed which closely follow the Land Use designations of the General Plan. It includes development standards that lay out minimum setback requirements for new structures, the

maximum height of those buildings, and minimum lot dimensions for subdivisions. The ordinance also defines key terms, establishes procedures for issuing use permits and variances, and outlines performance standards for a broad range of allowed uses. Additionally, it specifies the administration and amendment processes for the ordinance and prescribes penalties for any violations of its provisions.

The Zoning Ordinance also includes several combining zones in addition to the above-mentioned zones. Combining Zones modify the regulations for the principal zones with which they are combined. Table 4.12-2 below summarizes the purpose of the various combining zones. Through the General Plan and Zoning Ordinance 02-02, the City guides land uses and future development consistent with the vision described in the General Plan.

Table 4.12-2: City of Ferndale Combining Zones

Combining Zone	Symbol	Description	Summary of Requirements
Agricultural Combining Zone	-A	This zone is intended to be combined with principal R Zones in areas where average lot areas are sufficient to permit agricultural uses, including the keeping of livestock, in conformity with established usage and without creating nuisances or adverse health conditions.	Barns, corrals, pens and other structures for the keeping or housing of livestock shall be located not less than 50 feet from any residence and 20 feet from any lot line. No large livestock shall be butchered on the premises except for noncommercial use.
Special Building Site Combining Zone	-B	This zone (and sub-zones) is intended to be combined with any principal zone in which sound and orderly planning indicate that lot area and yard requirements should be modified.	There are several sub-zones ranging from B-1 to B-6.
Recreation Combining Zone	-X	This zone is intended to be combined with any principal zone in which the addition of recreational uses will not be detrimental to the uses of the principal zone or of contiguous zones.	Minimum lot area: five (5) acres. Minimum lot width: 300 feet. Maximum building height: 30 feet

Combining Zone	Symbol	Description	Summary of Requirements
Design Control Combining Zone	-D	This zone is intended to be combined with any principal zone in which the appearance and design of buildings and structures form a substantial contribution to the desirability of the zone for the uses permitted therein, and in which it is desired to protect the over-all Historical appearance of the zone by regulating the design of proposed buildings and structures in the zone.	Before any sign, structure or building may be erected, structurally altered, or in any way remodeled or improved so as to change the outward appearance of the sign, structure or building, a Design Review Permit shall be obtained unless exempted by Ordinance 2013-02
Qualified Combining Zone	-Q	This zone is intended to be combined with any principal commercial zone in which residential uses constitute the predominant use of land in such zone, and in which it is desired to protect the general peace, safety, comfort, health and welfare of persons residing in such areas from impacts which may result from the introduction of new commercial uses, by regulating those uses allowed in the underlying principal zone, either as a principal permitted use or a use requiring a use permit, to those certain uses which the Planning Commission finds are compatible with the maintenance of a healthful residential living environment and the residential character of the area	Minimum lot area, width, maximum lot depth, and maximum building height shall be the same as those required in the underlying principal zone
Housing Combining Zone	-H	This zone intended to cover the existing duplex units on a portion of the Ferndale Housing Project site located on Fairview Drive and Trident Lane. This combining zone principally permits the existing duplex units.	

In addition to the principal residential, commercial, and agricultural zones, there are several other zones in the Zoning Ordinance not currently being utilized by the City. These include a Highway Service Commercial (CH) Zone, Limited Industrial (ML) Zone, Heavy Industrial (M-H) Zone, Floodway (FW) Zone, and Flood Plain (FP) Zone which are described as follows:

- The Highway CH Zone is designated for commercial activities along highways, focusing on services for travelers.
- The ML Zone permits a range of industrial activities with specific limitations to minimize potential impacts.
- The M-H Zone is intended for extensive industrial uses, accommodating heavier manufacturing and production activities.
- The FW Zone is designated in areas prone to flooding, restricting development to prevent adverse impacts on flood flow.

- The FP Zone allows certain types of development in areas susceptible to flooding, with regulations aimed at minimizing flood-related risks.

As an implementation program of the new Land Use Element (LU-IP2), the City will update the Zoning Ordinance to be consistent with the new General Plan elements.

Ordinance 07-02 outlines the user rules for Russ Park, designating it as a natural primitive area and bird sanctuary open to the community for day use only. The provisions emphasize that the use, development, and maintenance of the park should align with and enhance its purpose as a natural and primitive space. The ordinance prohibits camping within Russ Park, emphasizing the focus on day-use activities and the preservation of the park's natural qualities and bird habitat.

Floodplain Management Ordinance 08-02 aims to safeguard public health, safety, and welfare by implementing regulations uniformly across the community. The ordinance addresses flood-prone, mudslide (mudflow), and flood-related erosion areas. Its purpose is to minimize losses, both public and private, arising from flood conditions. The regulations are designed to be legally enforceable and apply to all lands, whether publicly or privately owned, within the specified flood-prone and erosion-prone zones. The overarching goal is to manage flood risks and mitigate potential damage in these vulnerable areas.

Ferndale Emergency Operations Plan

The City of Ferndale Emergency Plan (EOP) serves as a comprehensive guide outlining the city's emergency planning, organization, policies, procedures, and response strategies for extraordinary situations related to natural disasters, technological incidents, and national security emergencies. The plan emphasizes integration and coordination with other governmental levels as needed. Key objectives of the Emergency Plan include establishing an emergency management organization to address significant emergencies or disasters, identifying responsibilities and procedures to safeguard the health, safety, and property of Ferndale's population, and outlining operational concepts for field response, City Emergency Operations Center (EOC) activities, and the recovery process.

Aligned with the California Standardized Emergency Management System (SEMS), the California Incident Command System (ICS), and the National Incident Management System (NIMS), the plan ensures Ferndale's emergency operational system functions cohesively within the broader California emergency management framework during both response and recovery operations. It emphasizes that the plan is based on functions rather than the number of personnel, allowing for flexibility in staffing assignments based on the scale of the event. In a major event, the EOP identifies individuals that may be called upon to perform multiple functions as opposed to depending on the number of personnel, ensuring an adaptive response to the situation as staff size grows.

Humboldt County Local Coastal Plan

The Eel River Area Plan is one of six Coastal Planning Areas in Humboldt County, prescribing land uses and development standards within the unincorporated areas of the Coastal Zone adjacent to the City north of Centerville Road (Humboldt County Planning and Building, 2017). Encompassing Table Bluff to Centerville, it includes areas like Loleta, Fernbridge, the Ferndale bottoms, Waddington, and Alton. The uses and standards in the plan, certified by the California Coastal Commission, align with and fulfill the policies of the California Coastal Act of 1976 and related legislation. Local policies protecting coastal resources are detailed in Chapters 3 and 4. They function similar to the General Plan, serving as a guide for approval of new development. It is supplemented by an Implementation Program which is commonly known as the Humboldt County Coastal Zoning Ordinance.

Humboldt County General Plan and Inland Zoning Regulations

The unincorporated regions within the Planning Area outside city limits south of Centerville Road fall under the jurisdiction of the Humboldt County General Plan and Inland Zoning Regulations. They are adopted by the Humboldt County Board of Supervisors and apply only to properties outside the City limits, but otherwise they function in much the same the same way as the City's General Plan and Zoning Ordinance.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to land use and planning from implementation of the Project would be significant if it would:

a) Physically divide an established community; or
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

This section analyzes whether development facilitated by the adoption and implementation of the General Plan Land Use and Safety Elements would physically divide communities. The evaluation of impacts related to land use planning is based on a comparison of the proposed Project to the applicable land use plans, policies, and regulations to determine if adoption and implementation would conflict with a plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. A policy inconsistency is considered a significant adverse impact only if the inconsistency would result in a significant adverse physical impact based on the established significance criterion.

PROJECT IMPACTS AND MITIGATION

Impact LU-01: Would the Project physically divide an established community?

Finding LU-01: The Land Use Element policies and implementation programs would prioritize development within City limits in areas within or contiguous to existing urban uses and services; concentrate growth around existing activity centers; and support the land use pattern of the established community. The Land Use Element would not promote development that would physically divide an established community. Therefore, adoption and implementation of the Land Use Element would result in a less than significant impact.

The Land Use Element and Safety Element updates do not directly involve construction, so they would not physically divide the established communities within the City. However, policies and implementation programs within these Elements have the potential to facilitate development or alter the density of development under the City's jurisdiction, thus altering the makeup and distribution of new growth in the community.

ANALYSIS OF EXISTING GENERAL PLAN POLICIES FOR IMPACT LU-01

Impacts to existing communities may occur directly or indirectly through alteration of the existing development pattern when undeveloped land is converted from open space to developed uses. New development may displace or disrupt connections within and between established communities. The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or wall) and/or

the removal of a means of access (such as a local road, trail, or bridge) that would impair mobility within or between existing communities. The Land Use Element does not authorize any such physical changes to the community.

The development of currently undeveloped land, especially outside of infill areas, would likely be the principal cause of adverse impacts to the established community. The principal General Plan tools for the protection of such land are the Land Use Map and policies that encourage infill. The Land Use Map identifies land appropriate for residential, commercial, and industrial development within the City that are served, or are expected to be served, with urban level services. Open space lands are those lands planned for conservation and/or continued resource production at very low densities or public lands that have little to no planned development allowed. Infill measures include performance standards for new development, which could help reduce impacts on the established community.

Goals, policies, and implementation programs in the existing General Plan address future growth of the community and are intended to guide new development in an orderly coordinated manner. These include the following "Residential Growth Goals":

1) To phase residential development so that it is adequately supported by City and community services.
2) To provide for residential development which will not interfere with the preservation and maintenance of agriculturally zoned lands.
3) To encourage the design of buildings and residential areas in harmony with the surrounding area.
4) To encourage the maintenance and preservation of structures having Victorian, historic, or unique architectural features.

In 2019 the Ferndale City Council adopted an update to the Housing Element that identifies, based on the 2019-2027 Regional Housing Need Allocation (RHNA), a need to accommodate 33 new dwelling units in the City at various income levels during the 2019 - 2027 planning cycle. The Housing Element inventoried vacant properties in the City and estimated a realistic development potential based on the development standards of the Zoning Ordinance.

ANALYSIS OF PROPOSED GENERAL PLAN POLICIES FOR IMPACT LU-01

The Land Use Element Update's policies continue encouraging infill development which minimizes the potential for physically dividing communities. The emphasis on new housing within existing City limits and smaller lot sizes, infill principles, containing anticipated population and economic growth within the current City boundaries, and encouraging improvement to existing structures in established residential areas would not physically divide established communities. Specific policies promoting infill development are:

> Policy LU-1.4 – Residential Infill encourages the infilling and completion of residential neighborhoods to take full advantage of available public services including drainage facilities.
>
> Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.
>
> Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.

Policy LU-2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.

Implementation programs LU-IP2 and LU-IP3, further emphasize the commitment to infill development. LU-IP2 requires zoning code updates for consistency and the potential addition of affordable housing provisions. LU-IP3 proposes Planned Development designation for specific areas, establishing objective standards for development, community spaces, mixed housing types, and addressing drainage and access points.

The following policies of the Land Use Element promote conservation of existing agricultural lands, timberlands, and open space areas. This has the effect of limiting new development in undisturbed areas which will also encourage infill in existing developed areas.

Policy LU-3.1, Conservation, requires existing open space and agricultural land at the edges of and surrounding the City to be preserved.

Policy LU-4.3, Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.

Policy LU-3.5, Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.

Policy LU-4.1, Russ Park Stewardship, requires the City to manage Russ Park for trails, habitat biodiversity, and stable soils in collaboration with local, regional, and state agencies.

Policy LU-3.4, Francis Creek Corridor continues the existing General Plan protections for the Francis Creek riparian corridor, "The Francis Creek riparian corridor shall be maintained or improved to permit natural flow where possible, prevent flooding in developed areas, and maintain natural habitat uses where appropriate."

These policies and programs are designed to enhance the City's livability and sustainability, fostering well-organized development within the Project Area.

ANALYSIS OF CHANGES TO THE LAND USE MAP

The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Proposed changes to the Land Use Map #'s 2, 3, 9, 10 and 13 all align the existing land use with the General Plan Land Use designation. They have no potential to physically divide the community and are not further discussed below. Proposed changes to the Land Use Map #'s 1, 4 – 7, 11 and 12 will all increase the residential development potential on parcels already planned and zoned for residential use, some of which are included in the residential land inventory of the 2019 Housing Element. These are not further evaluated because they allow new development in the same areas as the existing Land Use Element so there is no potential for them to significantly divide the community. Land Use map change #14 would not physically divide a community because it is unlikely any of the parcels would be further developed since they are small lots already developed with single-family homes. The remaining proposed changes to the Land Use map (#8) would allow new residential development in areas that currently have limited development potential because they are currently planned and zoned for

agricultural use. However, this area is adjacent to existing residential development and infrastructure, therefore further development of this area would not physically divide the community.

The Safety Element policies and implementation measures establish policies and implementation programs ensuring the safety and well-being of residents and properties within the City. The Safety Element focuses on addressing potential hazards, minimizing risks associated with natural disasters or human-made emergencies, and promoting resilience in the face of adverse events. It includes provisions related to seismic safety, hillside development standards, flood hazard mitigation, drainage master plans, hazardous materials management, emergency preparedness, and other measures to safeguard the community. Therefore, it has no potential for physically dividing an existing community.

CONCLUSION FOR IMPACT LU-01

The Land Use Element and Safety Element Updates do not directly result in any new development. The proposed Land Use Element Update accommodates the growth that is projected to occur within the City by increasing the density of properties already planned and zoned for residential use and by encouraging growth in areas that are already developed. The proposed updates do not propose roadways or other physical divisions that would divide or remove access to an existing community. Additionally, development would generally be focused on infill locations and these areas have existing infrastructure (including roadways) already in place creating adequate connections between established communities. The City's over-arching planning document, namely the General Plan goals, policies, and Land Use Maps, will help shape how the City will look, function, provide services, and manage resources for the next 20 years. As such, it is intended to guide orderly growth to appropriate areas and provide services and infrastructure necessary to accommodate planned growth.

The Land Use Element would prioritize development within City limits in areas within or contiguous to existing urban uses and services and would not promote incompatible development or development that would physically divide an established community. The Safety Element is intended to provide recommendations for decreasing risk to existing and new development from natural and man-made hazards so there is a lower risk to life and property. It has no potential for dividing communities. Therefore, adoption and implementation of the Project would result a less than significant impact.

MITIGATION MEASURE

No mitigation measures would be required.

Impact LU-02: Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Finding LU-02: The Land Use Element and Safety Element Updates were developed to be consistent with and enhance existing plans, policies, and regulations that avoid or mitigate environmental impacts in the City. Therefore, the impact of Project implementation is less than significant.

ANALYSIS OF EXISTING AND PROPOSED NEW GENERAL PLAN POLICIES FOR IMPACT LU-02

The earlier Regulatory Setting discusses the plans, policies, and regulations that apply to this Project. As described in the analysis for Impact LU-01, the existing Land Use Element has goals, policies, and implementation programs to guide new development in an orderly coordinated manner. These include goals to place new development within and adjacent to existing development, and to protect surrounding agricultural land and forest land for continued natural resource use.

The proposed Land Use Element Update reflects and enhances the goals, policies, and programs of the existing General Plan. The earlier discussion of Impact LU-01 identifies specific policies in the Land Use Element Update promoting infill development and conserving agriculture and forestlands for continued natural resource use. Section 4.5 Biological Resources and Section 4.11 Hydrology and Water Quality identify proposed Plan policies and implementation programs to protect riparian areas, wetlands, and the water quality of surface and groundwater. Section 4.18 Transportation and Circulation describes how the proposed Land Use Element update promotes improvements to the transportation system that accommodates the needs of all users, including pedestrians, bicyclists, transit riders, and motorists.

These proposed Land Use Element goals, policies and implementation programs go beyond the current General Plan providing more effective tools to achieve the goal of encouraging infill development while also protecting the environment. The following paragraphs describe how these proposed goals, policies and implementation programs align with the plans, policies and regulations protecting the environment presented in the earlier Regulatory Setting.

Consistency of the Land Use and Safety Elements with other state regulations, policies, and plans associated with specific environmental issues, such as air quality, GHG emissions, and transportation, is discussed in relevant sections of this Draft EIR.

State

- California Government Code Section 65300 (General Plans): The proposed Land Use and Safety Elements are required elements of General Plans, and the Land Use Element identifies a Planning Area which extends approximately 0.5 miles outside the City limits, so they are consistent with §65300.
- Cortese-Knox Act: The proposed policies and implementation measures encouraging infill development are consistent with the provisions of the Cortese-Knox Act which require local agencies encourage and provide planned, well-ordered, efficient urban development patterns with appropriate consideration of preserving open-space and agricultural lands within those patterns.
- California Complete Streets Act: The proposed policies and implementation measures encouraging transportation system improvements that accommodate the needs of all users, including pedestrians, bicyclists, transit riders, and motorists are consistent with the Complete Streets Act.
- Government Code Section 65302(g) (Safety Element Updates): The proposed Safety Element Update addresses all the requirements of §65302(g).
- State of California Emergency Plan: The proposed Safety Element Update includes implementation measures to update and maintain the Ferndale Emergency Operation Plan consistent with the requirements of the State of California Emergency Plan.

Regional

- Humboldt County Regional Housing Needs Assessment Plan: The current General Plan documents Ferndale has a supply of land which can accommodate more new homes than the expected demand through 2027 identified in the Regional Housing Needs Assessment Plan (37 new homes). The proposed changes to the Land Use Map will increase the allowed density on several properties providing more opportunities to accommodate future housing demand.
- Regional Transportation Plan Update, Humboldt County Regional Trails Master Plan, Humboldt County Regional Pedestrian Plan, Pavement Management Program Update: Section 4.18 Transportation and Circulation identifies policies in the proposed Land Use and Safety Element Updates which promote new development and improvements to the transportation system that accommodates the needs of all users, including pedestrians, bicyclists, transit riders, and motorists consistent with each of these regional transportation plans. These include Safety Element Policy 4.4 to support active transportation by investing in pedestrian and bike trails, and Program 4.d to designate and/ or develop five miles of new trail systems in and around the City by 2040 to support active transportation. There is also an emphasis on multi-modal transportation in Land Use Element Policies LU-1.8, LU-1.9 and LU-1.10 which support a commitment to reduce reliance on automobiles, promoting alternative transportation methods, and creating pedestrian-friendly spaces. These are all consistent with policies accommodating the needs of all users in these regional transportation plans.
- Particulate Matter (PM10) Attainment Plan: Proposed policies in the Land Use Element supporting infill development and the policies highlighted in Section 4.18 Transportation and Circulation of this EIR are consistent with the PM10 Attainment Plan's emphasis on programs to facilitate pedestrian and bicycle use, along with advocating for land use development practices that encourage walking to diverse destinations and reduce reliance on automobiles.
- Eel River Valley Groundwater Sustainability Plan: Section 4.11 of this EIR - Hydrology and Water Quality explains how Land Use and Safety Element Update policies and implementation programs are consistent with the Eel River Valley Groundwater Sustainability Plan. For example, Policy LU-3.2 will directly enhance groundwater recharge in newly developed areas by increasing onsite detention in new developments.
- Salt River Ecosystem Restoration Project: The Salt River Restoration Project does not extend into the City limits; however, the proposed Land Use Element identifies it as an Area of Interest in its Planning Area.
- Humboldt County Operational Area (Local) Hazard Mitigation Plan (LHMP), Humboldt County Emergency Operations Plan (EOP), Humboldt County Integrated Waste Management Plan, Humboldt County Hazardous Materials Area Plan, Humboldt County Community Wildfire Protection Plan: The proposed Safety Element Update includes policies and implementation measures that align with and carry out on a local level these regional plans.

Local

- General Plan: Section 4.5 Biological Resources and Section 4.11 Hydrology and Water Quality of this EIR identify proposed Plan policies and implementation programs to protect riparian areas, wetlands, and the water quality of surface and groundwater more effectively than the current General Plan. Program 8 of the 2019 Housing Element commits the City to completing CEQA review and certifying the Safety Element Update to minimize housing construction in environmentally hazardous areas.
- Municipal Ordinances: Proposed Implementation Program LU-IP2 requires zoning code updates for consistency with the proposed Land Use Element.

- Humboldt County Local Coastal Plan and Humboldt County General Plan and Inland Zoning Regulations: The discussion of the Planning Area in the proposed Land Use Element Update acknowledges Humboldt County's role in regulating development and protecting the environment outside City limits.

CONCLUSION FOR IMPACT LU-02

The General Plan is atop the hierarchy of local government laws regulating land use. Other laws and policies, such as specific plans, subdivision regulations, and the zoning ordinance are subordinate to, and must be consistent with, the General Plan. The adoption of the Land Use and Safety Element would require revisions to Zoning Code to ensure consistency with the General Plan. Therefore, consistency with the existing Zoning Code is not evaluated further and will be consistent with proposed land use changes analyzed in this Draft EIR.

The General Plan is a land use plan that contains policies that will be adopted, in part, for the purpose of avoiding or mitigating an environmental effect. In the future, projects consistent with Land Use Element will be able to use this EIR for a streamlined environmental review process. CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan or Zoning) allows projects to be eligible for streamlined environmental review if they are consistent with the development density established by existing zoning, community plan, or general plan policies for which the EIR was certified.

The proposed goals and policies of the Land Use and Safety Element Updates would be consistent with goals, policies, and strategies of the local plans evaluated in this Draft EIR Section. The Land Use and Safety Element Updates also implement state laws that protect the environment and are consistent with regional plans protecting the environment. Therefore, adoption and implementation of the Project would cause a less than significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Alta Planning and Design. (2008, June). *Humboldt County Regional Pedestrian Plan*. Retrieved from HCAOG: https://www.hcaog.net/sites/default/files/2008_final_draft_-_hc_regional_ped_plan.pdf

Cal OES. (2024). *State of California Emergency Plan & Emergency Support Functions*. Retrieved from Cal OES: https://www.caloes.ca.gov/office-of-the-director/operations/planning-preparedness-prevention/planning-preparedness/state-of-california-emergency-plan-emergency-support-functions/

HCAOG. (2018). *Humboldt Regional Bicycle Plan*. Retrieved from HCAOG: https://www.hcaog.net/documents/humboldt-regional-bicycle-plan-2018

HCAOG. (2019, March 21). *2019 Humboldt County Regional Housing Needs Assessment Plan*. Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/78290/71119-PC-version-Attachment-F---2019-Final-PDF?bidId=

HCAOG. (2022). *Regional Transportation Plan - VROOM*. Retrieved from HCAOG: https://www.hcaog.net/documents/regional-transportation-plan-vroom-2022-2042

Humboldt County. (1995). *COUNTYWIDE INTEGRATED WASTE MANAGEMENT PLAN FOR HUMBOLDT*. Retrieved from CEQA: https://ceqanet.opr.ca.gov/1995073095

Humboldt County. (2017). *3.7 Hazards and Hazardous Materials*. Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/58836/Section-37-Hazards-and-Hazardous-Materials-Revised-DEIR-PDF

Humboldt County. (2020). *County Plans*. Retrieved from Humboldt County: https://humboldtgov.org/3011/County-Emergency-Plans

Humboldt County. (2022). *Eel River Valley Groundwater Basin Resources* . Retrieved from Humboldt County: https://humboldtgov.org/2820/Eel-River-Valley-Groundwater-Basin-Resou

Humboldt County. (2023, April 12). *Climate Action Plan*. Retrieved from Humboldt County: https://humboldtgov.org/2464/Climate-Action-Plan

Humboldt County Association of Governments (HCAOG). (2018, July). *Humboldt Regional Bicycle Plan.* Retrieved from HCAOG: https://www.hcaog.net/sites/default/files/final_bike_plan_update_2018_incl_maps.pdf

Humboldt County Fire Safe Council. (2019). *Humboldt County Community Wildfire Protection Plan*. Retrieved from Humboldt County: https://humboldtgov.org/2431/Community-Wildfire-Protection-Plan

Humboldt County Planning and Building. (2017). *Humboldt County General Plan.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/61989/Chapter-13-Noise-Element-PDF

Humboldt County Planning and Building. (2017). *Humboldt County General Plan Update Final EIR.* Retrieved from Humboldt County: https://humboldtgov.org/626/Draft-Environmental-Impact-Report-EIR

Mendocino County. (2023). *Sphere of Influence Updates*. Retrieved from Mendocino LAFCOs: https://www.mendolafco.org/sphere-of-influence-updates

NCE. (2021, May 10). *2021 Pavement Management System Update*. Retrieved from HCAOG: https://www.hcaog.net/sites/default/files/nce_pavement_management_proposal.pdf

NCUAQMD. (2024). *Planning & CEQA*. Retrieved from NCUAQMD: https://www.ncuaqmd.org/planning-ceqa

Planwest Partners. (2010). *Humboldt County Regional Trails Master Plan*. Retrieved from HCAOG: https://www.hcaog.net/library

Planwest Partners. (2013, April). *Ferndale Safety Element 2013 Draft*. Retrieved from Ferndale City Website: https://ci.ferndale.ca.us/wp/general-plan/Draft%20Safety%20Element.pdf

SHN Consulting Engineers & Geologists, Inc. (2016, December). *Eel River Valley Groundwater Basin: Groundwater Sustainability Plan Alternative.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/57312/Groundwater-Sustainability-Plan-Alternative-December-2016?bidId=

4.13 Mineral Resources

This section evaluates the impacts to mineral resources within the City of Ferndale due to the Project. This section incorporates information and analysis from the 2019 City of Ferndale Housing Element Initial Study (IS) and Negative Declaration (ND) as it applies to the proposed Project. It also references the 2017 Humboldt County General Plan EIR.

Environmental Setting

Definitions

Minerals – Refers to naturally occurring chemical elements or compounds that are formed through inorganic processes and organic substances. When referring to mining, minable minerals or "ore deposits" are specifically defined as deposits of minerals or ore that hold significant value surpassing the expenses associated with their development, mining, processing, and the reclamation of the Project area.

Existing Mineral Resources Conditions

There are no surface mining operations within the Ferndale City limits. While Ferndale City itself does not host any surface mining operations, the County of Humboldt is home to a substantial number of river and quarry mining activities. These operations extract a volume of over one million cubic yards of material on an annual basis, playing a vital role in supporting the construction industry in Northern California.

The concentration of aggregate resources, such as sand and gravel, is primarily found along the Eel and Van Duzen Rivers in Humboldt County. In close proximity to Ferndale, the sand and gravel extraction activities take place at Fernbridge on the Worswick Bar. These operations serve as essential sources of aggregate materials for various construction projects in the region.

There is at least one surface mining operation within the Planning Area. The Polasek Quarry is located on Mattole Road just south of the City that generated usable rock product ranging from sand and silt to gravel-sized aggregate. As of 2016, the Quarry was extracting up to 19,000 cubic yards of material per year (CEQA, 2016). Quarry operations involve excavation, processing with a grizzly, loading, and hauling in dump trucks. There is no crushing, batch processing, blasting, or drilling conducted on site (California Department of Conservation Division of Mine Reclamation, 2022).

Regulatory Setting

Federal

There are no federal regulations pertaining to mineral resources that are applicable to this analysis.

State

Gravel mining operations in the Planning Area, as well as across the state, fall under the regulatory framework of the California Surface Mining and Reclamation Act (SMARA). The purpose of SMARA is to identify and protect areas containing significant mineral resources. In doing so, SMARA:

a) regulates surface mining operations to assure that adverse environmental effects are prevented or minimized;
b) requires reclamation of mined lands to a usable condition that is readily adaptable to alternative land uses;
c) produces and conserves minerals, and considers values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and
d) eliminates residual hazards to the public health and safety.

Compliance with SMARA is mandatory throughout all stages of a mining project, including the reclamation process, to ensure adherence to the Act's provisions. However, Humboldt County is among the 16 counties in California where the State Geologist has not classified the land based on its known or inferred mineral resource potential, as required by SMARA classifications (Humboldt County General Plan - Revised Draft EIR 3.9 Mineral Resources, 2017).

Regional and Local

There are no current sites within the City of Ferndale that are utilized for mineral resources. However, the City's Zoning Ordinance does make reference to the removal of natural materials in Section 7.20. Additionally, the excavation of natural materials is permitted with a use permit in the Floodway or FW Zone, and the Heavy Industrial or M-H Zone.

> Zoning Ordinance §7.20 – Removal of Natural Materials: Surface removal of minerals and natural materials, including building and construction materials to be used for commercial purposes, shall be allowed in any zone with a use permit. A use permit shall not be required for on-site excavation and removal of materials for normal construction of buildings structures or underground facilities or where such removal is primarily for building site grading and land leveling.

On a regional level, the County established the County of Humboldt Extraction Review Team (CHERT) through the adoption of Resolution 96-37 to address state, federal, and County permitting requirements in a coordinated manner and to implement mitigations required in program environmental impact reports for in-stream gravel mining. The CHERT consists of four members appointed by the Humboldt County Board of Supervisors with expertise in hydrology, fluvial geomorphology, fisheries, and river ecology. CHERT members serve as agents of the County for the purpose of providing technical expertise and reviews of mining proposals for in-stream gravel operations within the County.

All activities of CHERT are performed in accordance with the provisions of the Public Resources Code, Division 2, Chapter 9, Section 2774 and requirements of the California Government Code governing conflicts of interest, including Section 87100 et seq. CHERT prepares a post-extraction information report on the previous season's mining activities that is available to the public and provides recommendations for extraction quantities and methods, disturbance minimization measures, and potential mitigations. The CHERT is also concerned with possible adverse impacts to infrastructure such as levees, bridges, and the water district facilities. The Corps of Engineers and the California Department of Fish and Wildlife also make use of the CHERT review process for assessing gravel extraction effects, including impacts to listed salmonids and designated critical habitat.

Surface mining is not specifically identified as a primary and compatible use in the Humboldt County Framework General Plan or inland Zoning Regulations, except for the Rural Residential Agriculture Zone where Surface Mining is identified as a conditional use type. However, during the review of mineral extraction projects, the County has found surface mining to be a compatible temporary use. Humboldt County Ordinance 2117 implements the provisions of the Surface Mining and Reclamation Act of 1975 (Public Resources Code Sections 2710 and following, hereafter SMARA) and establishes county-wide surface mining regulations. These regulations are intended to protect the quality of the County's environment, limit land uses that would be incompatible with preservation and use of natural resources, and to assure the community of adequate supply of these resources for present and future generations. A conditional use permit and reclamation plan and adherence to development standards is required for surface mining operations. These regulations apply to all surface mining throughout the County (Humboldt County General Plan - Revised Draft EIR 3.9 Mineral Resources, 2017).

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to mineral resources from implementation of the Project would be significant if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Mineral resource impact assessments involved a review of data available through analysis of SMARA documents, CEQA permits, and USGS records.

PROJECT IMPACTS AND MITIGATION

Impact MIN -01: Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Finding MIN-01: No Impact

There are currently no sites within the City of Ferndale utilized for mineral extraction and the two elements under consideration do not include policies or programs related to alteration of any natural material extraction within the Project area. The scope of mineral resources associated with the Project would be limited to those involved in the construction and landscaping activities required for any proposed new development. The development of residences within the City is not expected to have a significant adverse impact on State resources or reserves. Therefore, no impacts to State mineral resources are anticipated to occur due to the proposed Project.

MITIGATION MEASURE

No mitigation measures would be required.

Impact MIN-02: Would the Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Finding MIN-02: No Impact

The Polasek Quarry on Mattole Road just south of City is identified in the Humboldt County Framework General Plan Conservation and Open Space Element as a rock extraction site. While outside of the City limits and not subject to the City's General Plan or Zoning regulations, it does exist within the City's planning area. However, there are no proposed policies or programs included in the two elements under consideration that would impact operations of the quarry. The scope of mineral resources associated with the Project would be limited to those involved in the construction and landscaping activities required for any proposed new development. The development of residences within the City is not expected to have a significant adverse impact on the local mineral resources or reserves. Therefore, no impacts to locally known mineral resources are anticipated to occur due to the proposed Project.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

California Department of Conservation Division of Mine Reclamation. (2022). *Mines Online*. Retrieved from California Department of Conservation: https://maps.conservation.ca.gov/mol/index.html

CEQA. (2016). *David Trutalli Polasek Quarry Conditional Use Permit, Surface Mining Permit and Reclamation Plan Renewal; APN 101-051-07*. Retrieved from CEQANET: https://ceqanet.opr.ca.gov/2016022028

Humboldt County General Plan - Revised Draft EIR 3.9 Mineral Resources. (2017). Retrieved from Humboldt County Website: https://humboldtgov.org/DocumentCenter/View/58828/Section-39-Mineral-Resources-Revised-DEIR-PDF

4.14 NOISE

This section analyzes noise-related impacts associated with development facilitated by the Project, including temporary noise impacts from construction activity and long-term noise impacts from operation. This section incorporates information and analysis from the 2016 Draft Ferndale Noise & Air Quality Elements. The 2017 California General Plan Guidelines Appendix D Noise Element Guidelines was also referenced for compliance information.

ENVIRONMENTAL SETTING

DEFINITIONS

Sound – Sound is the transmission of vibratory mechanical energy through pressure waves generated by a moving or vibrating source, and it can be perceived by the auditory system. When pressure variations occur at a frequency of 20 times per second or higher, they become audible and are referred to as sound. The frequency of sound is determined by the number of pressure variations per second, measured in cycles per second, known as Hertz (Hz).

Noise – Noise is characterized as sound that is loud, unpleasant, unexpected, or unwanted, placing it in a distinct category of sounds. The impact of noise on individuals can lead to various effects, such as general annoyance, interference with speech communication, sleep disturbances, and, in extreme cases, hearing impairment (Hendriks, Rymer, Buehler, & Andrews, 2013). It's important to note that the perception of sound and noise varies significantly from person to person, making it highly subjective in nature.

Decibel Scale – The decibel (dB) scale quantifies sound measurement using the hearing threshold (20 micropascals or vibrations per second), as a point of reference, defined as 0 dB. By comparing other sound pressures to this reference, the logarithm is taken to keep the numbers in a practical range. This scale permits a million-fold increase in pressure to be expressed as 120 dB, and changes in levels h(dB) correspond closely to human perception of relative loudness.

Vibration – Vibration is very similar to noise as both involve a source, a transmission path, and a receiver. However, vibration sets itself apart from noise in that it primarily involves the excitation of a structure or surface, whereas noise is generally associated with pressure waves transmitted through the air. Like noise, vibration is characterized by its amplitude and frequency. The perception of vibration by an individual is influenced by their sensitivity to it, as well as the amplitude and frequency of the vibration source and the response of the vibrating system. Vibration can be measured in terms of acceleration, velocity, or displacement. A common approach is to monitor vibration levels in peak particle velocities, typically expressed in inches per second. Standards have been established to address both perception and potential structural damage, based on vibration levels defined in terms of peak particle velocities.

Groundborne Vibration – Construction activities have the greatest potential to generate groundborne vibrations that may impact nearby receivers, particularly during grading and excavation phases. The primary vibratory source expected during construction is the vibratory roller; however, an impact pile driver may also be utilized during specific phases, resulting in higher vibration levels than the vibratory roller. Considering that groundborne vibrations can lead to structural damage and are measured instantaneously, vibration impacts are typically modeled based on the distance from vibration-intensive construction areas, conservatively assumed to be at the Project site's edge, to the nearest off-site structures.

Peak particle velocity (PPV) – refers to the maximum instantaneous positive or negative peak of a vibration signal. It is commonly utilized in monitoring construction vibrations, such as those resulting from blasting activities, as it

is directly related to the stresses experienced by buildings and structures. However, PPV is not used to evaluate human response to vibrations. This parameter represents the peak value of an oscillating vibration velocity waveform and is typically expressed in inches per second in the United States.

Average Vibration Amplitude – Vibrations also elicit responses in the human body but unlike rigid structures, the human body requires some time to respond to vibrations. While buildings respond to instantaneous movement, the human body responds to the average vibration amplitude, quantified as RMS (Root Mean Square). The RMS measurement typically yields a value that is approximately 71 percent of the PPV (Peak Particle Velocity) due to the averaging of particle movements. Consequently, human annoyance is often a more restrictive factor in establishing vibration limits compared to structural damage considerations.

Ambient – Community noise is commonly characterized by its "ambient" noise level, which refers to the overall noise present in a specific environment. To quantitatively measure the ambient noise level, a widely used statistical tool is the equivalent sound level (L_{eq}). The L_{eq} represents a steady-state sound level that contains the same total energy as a time-varying signal over a given period, often one hour. It serves as the fundamental basis for composite noise descriptors like L_{dn} and CNEL, which exhibit a strong correlation with community response to noise. The California Department of Health Services' (DHS's) Office of Noise Control has extensively studied the correlation between noise levels and their impacts on various land uses. Consequently, the office has developed land use compatibility guidelines for noise elements in local general plans, forming the basis for many noise element land use compatibility policies.

Equivalent Noise Level (L_{eq}) – The average acoustic energy content of noise during a specific time period is referred to as its equivalent noise level, abbreviated as L_{eq}. It ensures that both time-varying and steady-state noises delivering the same acoustic energy to the ear are represented equally. In assessing community impacts, the L_{eq} rating scale remains consistent, irrespective of whether the noise occurs during the day or night. For instance, $L_{eq}(1)$ represents the equivalent noise level over a one-hour period, while $L_{eq}(8)$ corresponds to an eight-hour period.

Day-Night Average Sound Level (L_{dn} or DNL) – The Day-Night Average Sound Level is the 24-hour average L_{eq} with an additional 10 dBA "weighting" adjustment for measurements during nighttime hours (10:00 p.m. to 7:00 a.m.) to account for increased noise sensitivity at night. For example, a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn} after applying the nighttime weighting, reflecting the heightened impact of nighttime noise on the overall acoustic environment.

Community Noise Equivalent Level (CNEL) – The Community Noise Equivalent Level is a measure of the average equivalent A-weighted sound level over a 24-hour period. It is obtained by adding five decibels to sound levels during the evening hours from 7 p.m. to 10 p.m. and an additional 10 decibels to sound levels during the night hours from 10 p.m. to 7 a.m.

Noise Contours – A line chart that indicates equal levels of noise exposure for different noise sources, providing a visual representation of the distribution of noise levels across the area. CNEL and L_{dn} are the metrics utilized here to describe annoyance due to noise and to establish land use planning criteria for noise.

Intrusive Noise – Noise that is above existing ambient noise levels at a given location. The degree of intrusiveness of a sound is influenced by various factors, including its amplitude, duration, frequency, timing, tonal or informational content, and the prevailing noise level in the area.

Noisiness Zones – Defined areas within a community wherein the ambient noise levels are generally similar (within a range of 5 dB, for example). Typically, all other things being equal, sites within any given noise zone will be of comparable proximity to major noise sources. Noise contours define different noisiness zones.

LOCAL NOISE SOURCES

The City's General Plan Noise and Air Quality Element Draft from 2016 identifies traffic as the main source of noise in Ferndale, particularly along State Route (SR) 211 which connects the City to US Highway 101. This two-lane roadway with shoulders connects to US Highway 101 at Fernbridge and becomes Main Street within the City limits. For traffic entering Ferndale, the 55 mph speed limit is lowered to 35 mph just outside of the easterly City limits, and again to 25 mph approximately a quarter mile later at the high school. Highway speeds are established by Caltrans using the California Manual for Setting Speed Limits (Caltrans, 2020). Vehicular traffic, especially trucks, generates tire, engine, and exhaust noise, while speed and volume contribute to overall traffic noise levels.

SR 211 is classified as a Rural Major Collector and serves as a key transportation route to and from the City of Ferndale, as well as for residents and visitors traveling to Petrolia, Capetown, and Honeydew, connecting to Mattole Road and Highway 101. According to the 2014 Route Concept Report by Caltrans, there are no plans to increase the capacity of SR 211 (Caltrans, 2014). Within the City Limits, Ferndale includes several Rural Major Collectors, such as Arlington Ave, 5th Street, Ocean Ave, Wildcat Ave, Bluff Street, and Grant Ave. There are no roads classified as Arterials. Market Street, Herbert Street, Shaw Ave, and Rose Ave are classified as Minor Collectors, while all other roads within the City are designated as Local Roads.

Traffic noise volume is influenced primarily by factors such as traffic speed, volume, and the type of vehicles on the road. The main motor vehicle noise source is tire noise, and it tends to increase with higher speeds. In addition to tire noise, trucks and older automobiles also produce engine and exhaust noise, and trucks generate wind noise. To address excessive noise from vehicle exhaust systems, the California State Vehicle Code requires all vehicles to be equipped with adequate mufflers. Furthermore, the Code prohibits the operation of passenger vehicles (except motorcycles) or trucks with a Gross Vehicle Weight Rating (GVWR) under 6,000 pounds if their exhaust noise level exceeds 95 decibels. For motorcycles, there are specific noise limits based on their manufacturing year; motorcycles manufactured before 1970 have a limit of 92 decibels, and those manufactured after 1970 have limits ranging from 80 to 88 decibels (California State Vehicle Code, 2022).

Within the City limits of Ferndale, stationary sources of noise are relatively limited. While the Humboldt County Fairgrounds may generate noise during events, it is not a continuous noise source. The nearest airport is Rohnerville Airport, a one-runway airport located about 6.5 miles southeast of Ferndale that is not audible within the City. The 2017 Humboldt County General Plan also identifies gravel operations as a stationary source of noise in the community (Humboldt County Planning and Building, 2017). Other minor or infrequent sources of stationary noise include high school sporting events, farm equipment repair activities, the Noon and emergency sirens, and events such as the Kinetic Sculpture Race and parades.

Although the impact of stationary noise sources within the City of Ferndale are relatively limited and infrequent, Single Event Noise occasionally occurs. Diesel delivery trucks generate the loudest single event noises in the planning area. A portion of truck traffic on SR 211 going through the City of Ferndale is generated by the logging industry hauling timber from the surrounding hills and Mattole Road (Caltrans, 2014). At 50 feet, a logging truck generates a noise level of 88 decibels and at 100 feet the level is 82 decibels. Single event sounds in the 75 to 85 decibel range are distracting to most people and sounds over 85 decibels are often disturbing and can cause hearing loss if exposure is frequent. For people inside a building, these noise levels would be perceived at about 20 decibels less with the windows closed and 10 decibels less with them open. Single event impacts from other

sources that generate noises of above 75 decibels, such as chain saws, lawn mowers and barking dogs, are not mapped because they occur at random or in scattered locations. Field work for the 2016 Noise and Air Quality Element Draft found that measurements of a chain saw that registered 108 dB (A) at the operator and a tractor that registered at 93 dB (A) at the driver suggest that Ferndale experiences the usual occurrences of loud single event noises. However, noise complaints are generally uncommon in Ferndale, and there has been a reduction in truck noise on Main Street due to logging activity reductions and compliance with State and Federal requirements for quieter trucks (City of Ferndale, 2016).

The 24-hour average ambient noise levels on Main Street were measured at 52 dB, and at 5th and Shaw Streets, the ambient levels were measured at 45 dB, both within acceptable limits for residential areas as outlined by the California Department of Health, Office of Noise Control. The Draft Element notes three different ambience conditions in Ferndale, varying during peak traffic hours, normal daytime, and nighttime, with the latter being approximately 10 dB(A) lower than daytime levels. Developing contours of the usual daytime ambience would be difficult because the lowest and highest readings were 45 and 52 decibels respectively; very quiet for a community during the day.

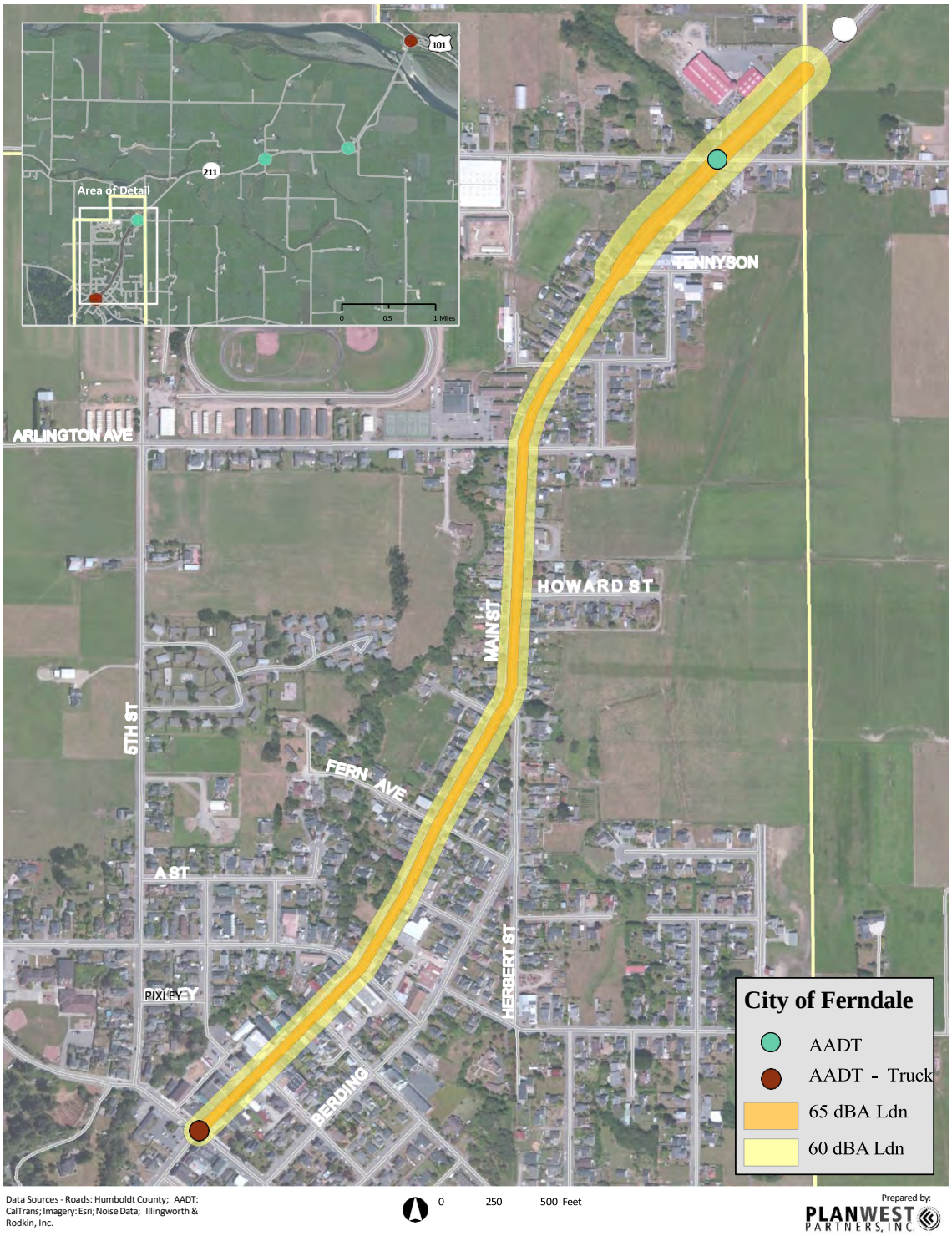
It should be noted that the estimated contours presented are outdoor noise levels and only account for attenuation due to distance, not from sound wall structures or other noise barriers. The contours are intended to show generally where higher noise levels, expressed in Annual Average Daily Traffic (AADT), may occur.

Local Sensitive Receptors

Sensitive receptors are land uses or users that are interrupted (rather than simply impacted) by relatively low levels of noise. Such receptors include hospitals, retirement homes, schools, churches, and sensitive wildlife habitat.

Ferndale's sensitive receptors include Ferndale Elementary and High Schools, Ferndale Community Church, St. Mary's Episcopal Church, Assumption Catholic Church, Our Savior's Lutheran Church, St. Mark's Lutheran Church, and Living Waters Foursquare Church. There are no hospitals, retirement homes, or sensitive wildlife habitats within the City. However, Francis Creek flows through town and Russ Park includes 105 acres of closed canopy forest deeded to the City, "as a refuge and breeding place for birds" (Z. Patrick Russ (Mrs.) deed).

Figure 4.14-1: Noise Contour Map for City of Ferndale in 2016 for Annual Average Daily Traffic (AADT)



REGULATORY SETTING

FEDERAL

Department of Housing and Urban Development

The federal Department of Housing and Urban Development (HUD) sets environmental criteria and standards in Title 24 of the Code of Federal Regulations (CFR), Part 51. New construction proposed in areas that exceed 65 dBA Ldn must incorporate noise attenuation features to maintain interior noise levels at 45 dBA Ldn. Development in areas exceeding 65 dBA Ldn requires further attenuation features. In general, the HUD regulations match the California state regulations discussed below.

Federal Transit Administration

The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their Transit and Noise Vibration Impact Assessment Manual (FTA 2018). For residential uses, the daytime noise threshold is 80 dBA Leq for an 8-hour period.

Occupational Safety and Health Administration

The federal government regulates occupational noise exposure common in the workplace through the Occupational Safety and Health Administration (OSHA) under the EPA. Noise limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA, and is not addressed further in this analysis.

STATE

AB 1307

This bill was signed into law as an urgency statute on September 7, 2023. This legislation added Section 21085 of Public Resources Code as a provision to CEQA which declared that for residential projects, the effects of noise generated by project occupants and their guests on human beings are not significant on the environment.

California Noise Control Act of 1973

California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or Ldn) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dBA in any habitable room used for living, sleeping, eating, or cooking.

California General Plan Guidelines

State law requires general plans to include a Noise Element under Government Code Section 65302(f). The California General Plan Guidelines, published by the Governor's Office of Planning and Research, indicate acceptable, specific land use types in areas with specific noise exposure. The guidelines also offer adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. These guidelines are advisory, and local jurisdictions have the authority to set specific noise standards based on local conditions.

California Building Code

California Code of Regulations Title 24, Building Standards Administrative Code, Part 2, Chapter 12, and the California Building Code codify the State noise insulation standards. These noise standards apply to new construction in California to control interior noise levels as they are affected by exterior noise sources and interior noise sources from separate areas. The regulations specify that interior noise levels shall not exceed 45 dB CNEL/L_{dn} in any habitable room, as well as specifying sound transmission class requirements for walls, floors, and ceilings around sleeping units.

California Green Building Code

California Green Building Standards Code 2019 (CALGreen) Section 5.507.4, Acoustical Control, regulates construction of non-residential uses within the 65 dBA CNEL/Ldn contour of an airport, freeway, expressway, railroad, industrial noise source, or other fixed source. According to Section 5.507.4.1.1 "buildings exposed to a noise level of 65 dB L eq (1-hr) during any hour of operation shall employ sound-resistant assemblies as determined by a prescriptive method (CALGreen Section 5.507.4.1) or performance method (CALGreen Section 5.507.4.2). Projects may demonstrate compliance through the prescriptive method if wall and roof-ceiling assemblies exposed to the noise source meet a composite sound transmission class (STC) rating of at least 50 or a composite outdoor/indoor transmission class (OITC) rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30. Projects may demonstrate compliance through the performance method if wall and roof-ceiling assemblies exposed to the noise source are constructed to provide an interior noise environment that does not exceed 50 dB L eq-1Hr in occupied areas during hours of operations.

REGIONAL AND LOCAL

Nuisance Ordinance 06-04

The City of Ferndale has established ordinances concerning noise in its broader Nuisance Ordinance 06-04. §4.03.3j mandates that property be maintained in such a way that it does not pose a health, safety or fire hazard or an attractive nuisance to children. One prohibited activity is vehicle or vessel repair in a residential zone which might make substantially interferes with the reasonable enjoyment of property by other persons, because of the substances, odors, noise, or visual clutter created by the repair. §7.04 of the Nuisance Ordinance outlines activities considered to be unlawful including excessive noise from residences and automobiles. Additionally, §7.04.2(d) refers to construction noise within the City. Construction activities are limited to between 7 a.m. and 7 p.m. on weekdays and 8 a.m. to 7 p.m. on weekends with no construction allowed on Federal holidays.

Traffic Ordinance 04-01

Noise abatement, related to truck noise specifically, at a city level is enforced by the City of Ferndale Traffic Ordinance 04-01. §5.20 Truck Routes mandates that motor trucks exceeding a maximum gross weight limit of three tons must follow a specific truck route within the City. The designated truck route starts at the intersection of Wildcat Road and Ocean Avenue, then proceeds easterly along Ocean Avenue until it intersects with Main

Street. From there, it continues along Main Street until reaching the easterly boundary line of the City of Ferndale. This carefully planned truck route effectively confines truck-related noise exclusively to the prescribed pathway through town.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to noise and vibration from implementation of the Project would be significant if it would:

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
b) Generate excessive groundborne vibration or groundborne noise levels; or
c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels.

Specific thresholds of significance for community ambient noise, construction, operation, and vibration are as follows.

Construction Noise

New development encouraged by the Land Use Element and Safety Element could have a significant impact if temporary construction noise during permitted daytime hours exposed noise-sensitive receivers to significantly adverse noise levels, or if construction noise occurred outside the hours detailed in Ferndale City Nuisance Ordinance 06-04, §7.04.2(d). As the City does not define a quantitative construction noise threshold, for purposes of analyzing impacts from the Project, the City has determined that the FTA construction criteria are applicable to the Project. The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their Transit and Noise Vibration Impact Assessment Manual (John A. Volpe National Transportation Systems Center, 2018)). For residential uses, the daytime noise threshold is 85 dBA L_{eq} (8hr) for an 8-hour period. Construction noise would be significant if it exceeds this threshold.

The table below shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (John A. Volpe National Transportation Systems Center, 2018). For assessment purposes, potential vibration impacts from construction activities were modeled at a reference distance of 25 feet, considering setback distances between equipment and off-site structures.

Table 4.14-1: Typical Vibration Levels for Construction Equipment

Equipment	PPV (in/sec) at 25 feet
Pile-driver (Impact – upper range)	1.518
Pile-driver (Sonic – upper range)	0.734
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozers	0.089
Loaded Truck	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: (John A. Volpe National Transportation Systems Center, 2018)

Operational Noise

A project normally has a significant effect on the environment related to noise if it substantially increases the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this, the following thresholds of significance are used to assess traffic noise impacts at sensitive receiver locations:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA CNEL and higher
- Greater than 3 dBA increase for ambient noise environments of 60-64 CNEL
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA CNEL

The EPA has concluded that maintaining environmental noise below a 24-hour exposure level of 70 decibels will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 decibels outdoors and 45 decibels indoors are identified as preventing activity interference and annoyance. These levels of noise are considered those which will permit spoken conversation and other activities such as sleeping, working and recreation, which are part of the daily human condition.

Table 4.14-2 presents the California Department of Health, Office of Noise Control noise compatibility guidelines for various land uses. The table illustrates the ranges of community noise exposure in terms of what is “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” These guidelines may be used to assess whether or not noise poses a conflict with land development. Table 4.14-3 provides adjustment factors to correct for seasonal variations in noise source levels, existing outdoor ambient noise levels, previous exposure to the source, community attitudes, and tonal characteristics of the source. Adjusting the noise exposure values according to Table 4.14-3 will provide a more accurate assessment of locally acceptable noise exposure.

Table 4.14-2: Community Noise Exposure (L_{dn} or CNEL, dB)

Land Use Category	50	55	60	65	70	75	80	Maximum Interior Noise Levels*
Residential – Low Density Single Family, Duplex, Mobile Home								45
Residential – Multi-Family								45
Transient Lodging – Motel/Hotel								45
Schools, Libraries, Churches, Hospitals, Nursing Homes								45
Auditorium, Concert Hall, Amphitheaters								35
Sports Arena, Outdoor Spectator Sports								-
Playgrounds, Neighborhood Parks								-
Golf Courses, Riding Stables, Water Recreation, Cemeteries								-
Office Buildings, Business, Commercial and Professional								50
Industrial, Manufacturing, Utilities, Agriculture								50



NORMALLY ACCEPTABLE – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction but with closed windows and fresh air supply system or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and need noise insulation features included in the design

CLEARLY UNACCEPTABLE – New construction or development should generally not be undertaken.

*Due to exterior sources

Source: (California Governor's Office of Planning and Research, 2017)

Table 4.14-3: Noise Exposure Adjustment Factors

Type of Correction	Description	Amt. of Correction to be Added to Measured CNEL in dB
Seasonal Correction	Summer (or year-round operation).	0
Seasonal Correction	Winter only (or windows always closed).	-5
Correction for Outdoor Residual Noise Level	Quiet suburban or rural community (remote from large cities and from industrial activity and trucking).	+10
Correction for Outdoor Residual Noise Level	Quiet suburban or rural community (not located near industrial activity).	+5
Correction for Outdoor Residual Noise Level	Urban residential community (not immediately adjacent to heavily travelled roads and industrial areas).	0
Correction for Outdoor Residual Noise Level	Noise urban residential community near relatively busy roads of industrial areas).	-5
Correction for Outdoor Residual Noise Level	Very noisy urban residential community.	-10
Correction for Previous Exposure and Community Attitudes	No prior experience with the intruding noise.	+5
Correction for Previous Exposure and Community Attitudes	Community has had some previous exposure to intruding but little effort is being made to control the noise. This correction may also be applied in a situation where the community has not been exposed to the noise previously, but the people are aware that bona fide efforts are being made to control the noise.	0
Correction for Previous Exposure and Community Attitudes	Community has had considerable previous exposure to the intruding noise and the noise maker's relations with the community are good.	-5
Correction for Previous Exposure and Community Attitudes	Community aware that operation causing noise is very necessary and it will not continue indefinitely. This correction can be applied for an operation of limited duration and under emergency circumstances.	-10
Pure Tone or Impulse	No pure tone or impulsive character.	0
Pure Tone or Impulse	Pure tone or impulsive character present.	+5

Vibration

The City has not adopted a significance threshold to assess vibration impacts during construction and operation. Therefore, criteria from the FTA are used to evaluate potential construction vibration impacts related to potential building damage from construction (FTA 2018). Construction vibration impacts from development would be significant if vibration levels exceed the FTA criteria. To assess the potential for architectural damage to buildings, the Federal Transit Administration (FTA) recommends specific vibration damage criteria, which are summarized in the table below.

Table 4.14-4: Criteria for Vibration Damage Potential

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Nonengineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: (John A. Volpe National Transportation Systems Center, 2018)

Construction Noise

Construction equipment can be considered to operate in two modes: stationary and mobile. Stationary equipment operates in a single location for one or more days at a time, with either fixed-power operation (e.g., pumps, generators, and compressors) or variable-power operation (e.g., pile drivers, rock drills, and pavement breakers). Mobile equipment moves around a construction site with power applied in cyclic fashion, such as bulldozers, graders, and loaders (FTA 2018). Each phase of construction has its own noise characteristics due to specific equipment mixes. Some have higher continuous noise levels than others and some may have high-impact intermittent noise levels (FTA 2018). Construction noise levels may fluctuate depending on the type of equipment being used, construction phase, or equipment location. In typical construction projects on vacant sites, grading activities typically generate the highest noise levels because grading involves the largest equipment and covers the greatest area.

Variation in power imposes difficulty in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the Leq of operating the equipment (FHWA [Federal Highway Administration] 2018). It is common for programmatic environmental analysis to utilize a conservative standard reference distance of 50 feet. Project-level noise analyses for future development due to the Land Use Element and Safety Element will use site specific conditions and the estimated distances between proposed pieces of equipment and phases to the nearest off-site sensitive receiver, which may be further than 50 feet.

Heavy construction equipment during grading and site preparation for future development would typically include bulldozers, excavators, front-end loaders, dump trucks, and graders. For the purposes of this analysis, it is assumed that diesel engines would power all construction equipment. Construction equipment would not all operate at the same time or location due to the different tasks performed by each piece of equipment. In addition, construction equipment would not be in constant use during the 8-hour operating day.

Impact devices such as pile drivers could be used for construction of future development. Although use of pile drivers is uncommon during construction for the type of development facilitated by the Land Use Element and Safety Element, pile driving could be required for some ground types. As such, this analysis considers the potential

for use of this equipment as a conservative analysis. A pile driver is used to drive foundation piles into the ground. These devices would typically operate separately from other equipment.

Table 4.14-5: Noise Levels of Various Construction Equipment

Equipment	Typical Noise Level (dBA) at 50 Feet from Source
Concrete Mixer	85
Dozer	85
Grader	85
Jackhammer	88
Loader	80
Paver	85
Pile-driver (Impact)	101
Pile-driver (Sonic)	95
Truck	84

On-Site Operational Noise

The primary on-site noise sources associated with operation of residential units, and those discussed in this analysis, would include noise from stationary HVAC equipment, on-site vehicle movement (e.g., trash hauling), domestic pets, and outdoor activities.

Traffic Noise

Traffic noise levels for existing and Project conditions were estimated using the FHWA traffic noise prediction model methodology. Traffic noise impacts are analyzed based on average daily traffic (ADT) roadway volume for conditions in 2016 as this is the most recent data available for the City of Ferndale.

Groundborne Vibration

Construction activities have the greatest potential to generate ground-borne vibration affecting nearby receivers, especially during grading and excavation. The greatest vibratory source during construction activities is anticipated to be a vibratory roller; however, an impact pile driver may be used during specific construction phases and could generate higher vibration than a vibratory roller.

Project Impacts and Mitigation

Impact NOI-01: Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Finding NOI-01: The Land Use Element and Safety Element do not directly include construction projects. Any projects resulting from the policies within the Land Use Element and Safety Element would be subject to site-specific design plans, existing regulations, as well as City ordinances regarding noise, therefore any impacts on noise levels resulting from their implementation are considered less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 – Residential Infill • Policy LU-1.7 – Planned Development • Policy LU-1.8 – Multi-Modal Transportation • Policy LU-1.9 – Right-of-Way • Policy LU-1.10 – Community Spaces
Land Use Element	Goal LU-2	• Policy LU-2.1 – Commercial Infill • Policy LU-2.2 – Tourism and Resident Services • Policy LU-2.4 – Light Industrial Use • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities • Policy LU-2.6 – Existing Commercial Areas Revitalization • Policy LU-2.7 – Increase Residential Use • Policy LU- 2.8 – City Parking Standard
Land Use Element	Implementation Program	• LU-IP2: Zoning Code Updates • LU-IP3: Planned Development Designation

Community noise levels can increase with development. With a static rate of growth experienced over the past 13+ years, Ferndale's development trends have remained equally static. There is limited land available in Ferndale because the City has maintained its one square mile boundary. At this time, the City does not plan to annex additional land. Policy LU-1.7 of the Land Use Element includes rezoning of an area into a Planned Development within an area surrounded by existing residential housing. Policy LU-1.4 also promotes residential infill of existing residential housing areas. As of September 2023, Section 21085 of the Public Resources code mandates that any CEQA evaluation of residential projects does not deem the effects of noise generated by project occupants and their guests on fellow human beings to have a significant impact on the environment. Noise levels within the City are not expected to increase significantly due to development.

Any projects that result from implementation of the Land Use Element and Safety Element would be subject to site-specific design plans and CEQA documentation as well as City ordinances regarding noise. As part of this process, any impacts from noise associated with the site-specific project would be discussed and mitigated as needed. Therefore, any impacts on noise levels resulting from the Land Use or Safety Element implementation are considered to be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact NOI-02: Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

Finding NOI-02: Any projects resulting from the policies within the Land Use Element and Safety Element would be subject to site-specific design plans and City ordinances regarding

groundeborne vibration or groundborne noise, therefore any impacts on vibration or noise levels resulting from their implementation are considered less than significant.

Relevant Land Use and Safety Element goals, policies, and programs include:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-2	• Policy LU-2.4 – Light Industrial Uses
Land Use Element	Implementation Program	• LU-IP2: Zoning Code Updates • LU-IP3: Planned Development Designation
Safety Element	Goal 2 Implementation Program	• Program 2.i

Construction activities resulting from the implementation of the Land Use Element and Safety Element may produce some ground vibration. Any such construction projects would be temporary and subject to site specific construction plans and City ordinances pertaining to construction activities. As part of this process, any impacts from vibration associated with the site-specific project would be discussed and mitigated as needed. Therefore, any impacts on ground vibration as a result of Land Use and Safety Element implementation are considered to be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact NOI-03: For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two nautical miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

Finding NOI-03: There are no existing airport facilities within two nautical miles of the Project area. As such, there will be no impact.

There are no airports located within two miles of the City of Ferndale. The nearest airport is Rohnerville Airport, a small, one-runway airport located about 6.5 miles southeast of Ferndale which is not within the Project's planning area and is not audible within the City. As such, there will be no impacts that would expose people residing or working in the Project area to excessive noise levels from airport uses.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

California Governor's Office of Planning and Research. (2017). *General Plan Guideline: 2017 Update, Appendix D - Noise Element Guidelines.*

California State Vehicle Code. (2022). Retrieved from California Legislative Information: https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml

Caltrans. (2014). *Transportation Concept Report State Route 211.* Retrieved from HCAOG: https://www.hcaog.net/sites/default/files/5g_route_211_tcr_draft_actual_report.pdf

Caltrans. (2020). *California Manual for Setting Speed Limits.* Retrieved from California Department of Transportation: https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/2020-california-manual-for-setting-speed-limits-a11y.pdf

City of Ferndale. (2016). *Draft Noise and Air Quality Element.* Retrieved from City of Ferndale: https://ci.ferndale.ca.us/documents/general-plan/

Hendriks, R., Rymer, B., Buehler, D., & Andrews, J. (2013). *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* Sacramento: Caltrans.

Humboldt County Planning and Building. (2017). *Humboldt County General Plan.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/61989/Chapter-13-Noise-Element-PDF

John A. Volpe National Transportation Systems Center. (2018). *Transit Noise and Vibration Impact Assessment Manual.* Federal Transit Administration.

4.15 Population and Housing

This section summarizes existing and projected population and housing trends within the City and region and analyzes the potential impacts on population and housing due to the Project.

Environmental Setting

Population Trends and Projected Growth

According to the 2023 State Department of Finance (DOF), the total population of the City of Ferndale was 1,371 which is no different than the population for the City from the 2010 Census. The City's population has been remarkably stable since 1990 as shown in Table 4.15-1 below. Periods of modest growth have been followed by periods of modest decline and generally show a slight increase in population of about 0.03 percent per year.

While the City population has remained consistent over the past few decades, its composition has changed somewhat. For example, the percentage of people over the age of 65 increased steadily over the past two decades from approximately 16 percent in 2000 to 29 percent in 2020. And there are fewer persons per household in 2020 (2.17 persons) compared to 30 years ago (2.24 persons).

Table 4.15-1: Ferndale Population Changes 1990-2022

Year	Population	% Change from Last Census	Year/Year % Change
1990	**1,331**		
2000	**1,382**	3.83%	
2010	**1,371**	-0.80%	
2011	1,373		0.15%
2012	1,373		0.00%
2013	1,379		0.44%
2014	1,376		-0.22%
2015	1,377		0.07%
2016	1,380		0.22%
2017	1,385		0.36%
2018	1,384		-0.07%
2019	1,373		-0.79%
2020	**1,398**	1.97%	1.82%
2021	1,385		-0.93%
2022	1,374		-0.79%
2023	1,371		-0.22%

- Years of the Decennial Census are highlighted.
- Population during the reporting period:

  Average = 1,367 persons Median = 1,377 persons

Sources: US Census Bureau 1990, 2000, 2010, 2020, California Department of Finance 2023

Figure 4.15-1: Ferndale's Population, 1990-2023

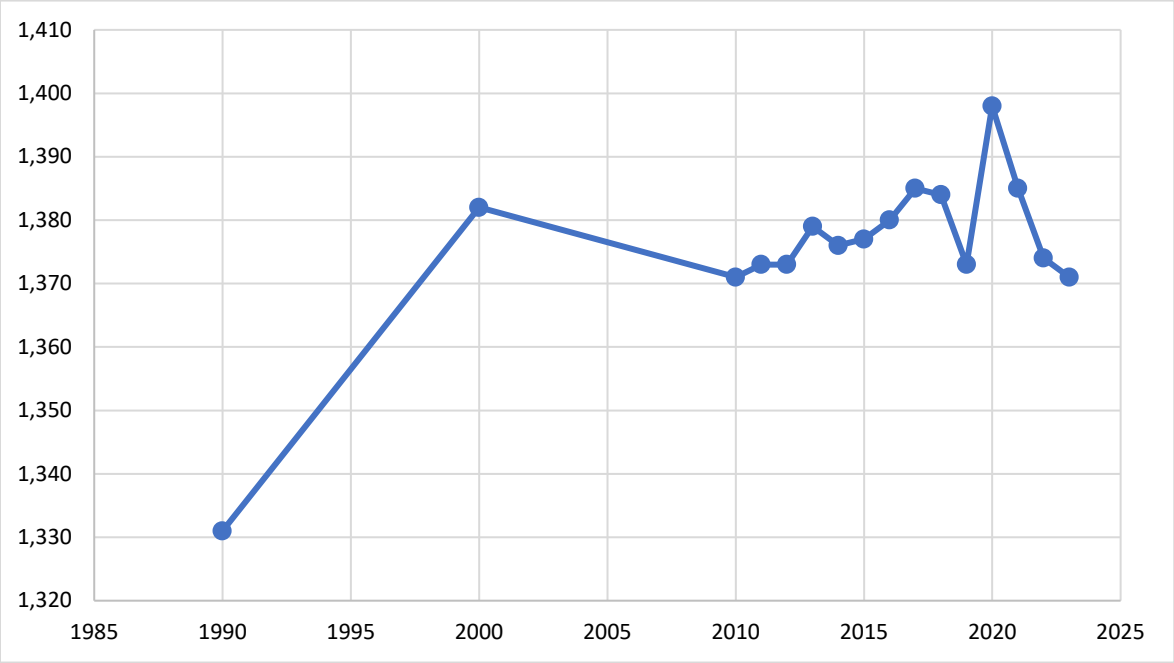


Table 4.15-2: Regional Population Changes in Humboldt County and Nearby Jurisdictions (2010-2020 and 2020-2023)

Jurisdiction/County	2010	2020	% Change	2023	% Change
Ferndale	1,371	1,398	2.0%	1,371	-2.0%
Fortuna	11,926	12,516	4.9%	12,256	-2.0%
Arcata	17,231	17,891	3.8%	18,688	4.5%
Eureka	27,191	26,512	-2.5%	26,139	-1.4%
Unincorporated	71,916	70,083	-2.5%	70,892	1.2%
Incorporated	62,707	58,542	-6.6%	63,155	7.9%
County Total	**134,623**	**136,463**	**1.4%**	**134,047**	**-1.8%**

Sources: US Census Bureau 2010, 2020, California Department of Finance 2023

Population and Housing Projections

As described in the Project Description in Chapter 3 of this EIR, official population growth projections are prepared for counties but not cities in California. However, in the past there has been a strong connection between changes in Ferndale's population and changes in the population within the county as a whole. This analysis assumes those trends will continue into the future.

For the purposes of this analysis, low, medium, and high growth scenarios are used to frame the discussion in planning for the next twenty or more years. The "low" growth rate scenario uses a 0.03 percent per year annual average population growth rate (AAGR), which is generally consistent with the City's stable population over the last 20 years. The "high" population growth scenario uses a 0.5 percent AAGR. This figure exceeds recent growth

rates but reflects the future housing needs anticipated in the 2019 regional housing needs plan prepared by the Humboldt County Association of Governments. The "medium" growth scenario describes a midpoint between the high and low growth scenarios and uses a 0.25 percent AAGR.

The projected growth rate for Humboldt County overall is expected to be approximately 3.0 percent during the 2019 to 2027 time period (0.375 AAGR) based on the figures used by the State Department of Housing and Community Development (HCD) in determining the projected housing need (California Department of Housing and Community Development 2018).

Population and Housing Conditions

Population and housing conditions are detailed in the Housing Element and the Housing Element Technical Appendix of the General Plan, which was updated in 2019 and is incorporated by reference into this EIR through the following website: https://www.hcd.ca.gov/housing-elements/docs/ferndale-6th-adopted102919.pdf. The following paragraphs highlight the City's population and housing conditions detailed in the Housing Element and the Technical Appendix.

Changing Housing Needs

Ferndale is a small community that changes slowly, but demographic trends suggest there is potential for gentrification if relatively affluent retired people continue to move from other areas, driving up the cost of limited housing.

Seniors and long-time Ferndale residents still comprise a significant portion of the City's population; however, these residents often have more limited incomes than individuals moving to the area and are therefore less equipped to compete in the market for decent housing. Providing affordable housing and alternative housing arrangements (e.g., assisted living, residential care) for the seniors to age in place and for others to remain in the community is an important goal of the City. Providing suitable housing for families is another City priority and requires housing stock diversification. Through new construction, the City facilitates a range of housing options to meet the varied needs of all residents, and the community desires to create a better balance of housing, both in its affordability (rental and ownership) and in the range of housing options available to different households, diverse income ranges, family sizes, formats, settings, and lifestyles.

Aging Housing Stock

Almost 90 percent of the City's housing stock is 30 years of age or older, a threshold when housing generally shows signs of aging, requiring major upgrades to the physical structures and systems (such as electrical and plumbing). Approximately half of the housing stock was constructed before 1939, and almost 80 percent of Ferndale's housing stock is at least 50 years old.

Ferndale is known for its Victorian architecture, and the majority of households have maintained their historic homes in good condition; however, certain architectural features prone to deteriorating, including windows and roofs, require continued maintenance. In addition to maintenance and upkeep issues, the age of the housing stock and high seismic activity of the area also means that the City has a large number of structures that would present safety concerns in the event of an earthquake, and seismic improvements to upgrade these structures can be costly. Accordingly, the City is implementing programs to encourage home repairs and rehabilitation.

Rising Housing Prices and Lack of Deed-Restricted Affordable Housing

As of 2019, Ferndale has the highest home prices in the region, and the greatest rate in increased value in the past two years. According to recent census data, the median home price is $444,000 but median annual income is

$49,185, leading to a situation in which only above-moderate income households can afford to purchase a home in the City. Additionally, Ferndale has 52 rent stabilized units contained in one development (the former Navy Base Housing development). The rental restriction on these units will be lifted in 2031. The City is making efforts to protect its affordable housing stock and explore further options for encouraging the development of deed-restricted and non-restricted affordable units.

Community Integrity and City Buildout

The City is approaching residential buildout in many areas, including its downtown, and many of the specific areas that have historically accommodated affordable housing are reaching their cap. Yet City residents want to preserve lower density character in existing neighborhoods. These factors underscore the importance of targeting growth to selected areas best suited to accommodate housing, and the City must balance the need for new housing with the need to protect the quality and integrity of existing neighborhoods. As a strategy to facilitate new construction, the City is directing some of its future housing development away from the existing residential neighborhoods through the proposed Land Use Element Update in areas that currently cannot support multifamily housing. Higher-density developments in commercial areas are also being encouraged through the proposed Land Use Element Update.

Relationship to Jobs and Transit

Housing options are not always available to the City's workforce, and lower income families are limited in their housing choices. Ownership of housing is beyond the reach of many lower- and moderate-income households. However, it is acknowledged that housing in the community does not have a single solution, nor is it an isolated issue. There is an accepted link between long term, enduring housing solutions and other related policies such as alternative transportation, community health, green building, and economic vitality. As such, current State priorities are moving towards prioritizing infill in areas with high concentrations of jobs and transit to increase walkability and reduce greenhouse gas emissions.

Ferndale's economy currently revolves around its thriving tourism industry but suffers from a lack of economic diversity and living-wage jobs. In addition, Ferndale is not currently served by public transit. This has led to an interest from Ferndale's Planning Commission and City Council in exploring what Ferndale's niche should be in the greater scheme of Housing Needs in the region, and what appropriate strategies should be for smaller jurisdictions in rural counties.

Flooding and Drainage Constraints

The City of Ferndale is located within the Eel River Valley. The City and surrounding area are within the Salt River watershed, which in turn flows into the Eel River near its mouth. Ferndale and the surrounding areas have historically had problems with storm water and drainage. Storm runoff associated with heavy winter rains has caused chronic flooding and sedimentation problems in the relatively flat terrain in the City, and in the rural areas north of the City near the Salt River. The City of Ferndale recognizes a dilemma that the areas best suited for growth because of their central location adjacent to existing services are also areas where the City experiences chronic flooding. The City has found that storm water runoff management is in the public interest and a significant factor in planning future development.

Protection of Ferndale's Unique Resources

Ferndale's Land Use Element and Historical and Cultural Resources Element outline Areas of Special Concern and Unique Resources, which include: the Francis Creek Watershed and other drainage courses; regional ecology in Russ Park and the surrounding areas; aesthetic areas and viewsheds; and the large number of individual Victorian Structures, and Main Street as a Historic District. Unique Resources Goals include: retain the scenic aspect of the

City and its surrounding open countryside; preserve and protect existing architectural and historic features; and protect the Francis Creek watershed from Land Use and development activities which could degrade its quality. Ferndale residents and officials acknowledge the value of these resources and understand the importance of ensuring General Plan consistency; therefore, the Land Use Element Goals, Policies, and Programs have been drafted with these considerations in mind.

Regulatory Setting

The federal, state and regional/local regulations affecting housing and population in the City are the same as those described earlier in this EIR under Section 4.12 - Land Use and Planning. To avoid duplication, they are not repeated in this section of the EIR. For a complete description of the regulatory setting for housing and population, please refer to the Regulatory Setting discussion of Section 4.12 - Land Use and Planning earlier in this EIR.

Impact Analysis

Significance Thresholds and Methodology

According to Appendix G of the CEQA Guidelines, impacts related to housing or population from implementation of the Project would be significant if it would:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The analysis of potential housing and population impacts is qualitative rather than project-specific because the type of development being evaluated is potential development that may or may not occur in the future. For this analysis, trends in population and housing within the Project Area were evaluated using current available data sourced from the City, California Department of Finance, and the US Census Bureau. Also, the current General Plan documents Ferndale has a supply of land which can accommodate more new homes than the expected between 2023 – 2045 under this EIR's high-growth scenario. Given this, the evaluation of population and housing impacts in this EIR focuses on changes in the type of new development allowed by the proposed Land Use and Safety Element updates. For instance, proposed Land Use Element changes on several properties will switch the Land Use designation from R-1 Low Density to R-2 Medium Density. This would allow duplexes or triplexes to be built where before only single-family homes would be allowed. These changes are expected to result in a more compact form of development because housing is allowed to be developed at higher densities.

Project Impacts and Mitigation

Impact POP-01: Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Finding POP-01: The act of updating the Land Use and Safety Elements and implementing those changes through adoption of zoning regulations is not anticipated to induce substantial unplanned population growth in an area, either directly or indirectly. Proposed Land Use Element policies encourage infill development which are designed to contain new development in areas where development already occurs and where public services and infrastructure is available to accommodate the new development. Specific land use and

zoning changes to encourage new development are proposed in infill areas and/or require discretionary permits for the new development which will evaluate and mitigate its environmental impacts, so no mitigation is necessary at this time. This impact is considered less than significant.

The Safety Element is intended to provide an overview of potential hazards in the City and provide recommendations for decreasing those hazards so there is a lower risk to life and property. It has no potential for inducing growth, planned or otherwise.

The Land Use Element frames the policies that will govern the use and intensity of development for lands located in the City. These policies impact a broad spectrum of uses and development, ranging from creating new residential, commercial and industrial lots, and constructing or remodeling structures on existing lots, to minor projects such as accessory structures. The policies also cover a broad spectrum of land use types ranging from agricultural lands to high-density residential areas.

The Land Use Element Update is a long-range land use plan that establishes development patterns and guides future growth in the City. The land use map identifies areas for development of residential and commercial land uses, as well as roads and other infrastructure, to accommodate forecasted population growth. As such, the Land Use Element Update would induce population growth; however, growth would not be considered substantial unless the proposed Element induced growth beyond state and regional projections.

Humboldt County is projected to grow at a significantly slower rate than the rest of the State of California. The State of California is anticipated to grow approximately 38 percent from 39,255,883 in 2016 to 54,266,115 in 2040. The State Department of Finance (DOF) forecasts that Humboldt County will grow approximately 2.4 percent between 2016 and 2040 to a population of 138,307 in 2040. The County would represent substantially less than one percent of the statewide population in 2040.

Unlike most areas of the state, growth projections are not prepared by the regional transportation planning agency (Humboldt County Association of Governments, or HCAOG) for the County. The HCAOG relies on DOF population forecasts for the regional transportation plan and on the Regional Housing Needs Assessment from HCD. Therefore, growth that can be accommodated by the Land Use Element Update cannot be compared with state or regional projections other than DOF projections.

The Ferndale City Council adopted the Housing Element that identifies, based on the 2019-2027 Regional Housing Need Allocation (RHNA), a need to accommodate 33 new dwelling units in the City at various income levels during the 2019 - 2027 planning cycle. The Housing Element identifies a specific need for nine units for the extremely low and very low-income categories (0 to 50 percent of median income), five for the other low income (51 to 80 percent of median income), six for moderate income (81 to 120 percent of median income), and 13 for above moderate-income households. The proposed Land Use map provides a wide range of locations that can accommodate growth, which would ensure that the implementation of the Housing Element would not be jeopardized.

The Land Use Element Update provides sufficient flexibility in terms of its ability to accommodate growth to allow for the Housing Element to be implemented without obstruction. In order to provide a reasonable opportunity to obtain the RHNA housing goal, adequate potential area for development of various housing types has been

provided. The proposed Land Use map maintains the potential area for development as considered in the Housing Element, and therefore, would not conflict with the Housing Element housing objectives.

According to the Project Description, the proposed Land Use Element Update provides for modest expansion of infill areas. The Land Use Element also provides for a slight increase in planned urban residential densities, increasing infill opportunities and urban-serviceable development. Additional industrial and commercial lands would be made available based on historic proportion to residential land uses.

Development under the Land Use Element Update has the following characteristics:

- Generally maintains the characteristics of existing neighborhoods.
- Applies land use designations that support mixed-use development and other techniques to increase efficiency of land utilization, including live-work commercial centers.
- Maintains current planned residential densities outside of infill areas.
- Enhances resource production land protections with new conservation and open space standards, and with the proposed change in the land use designation for Russ Park on the Land Use map from PF – Public Facility to NR – Natural Resources.

ANALYSIS OF CHANGES TO THE PROPOSED LAND USE AND SAFETY ELEMENT POLICIES AND IMPLEMENTATION MEASURES

The Land Use Element, Safety Element, Housing Element, and Conservation and Open Space policies in the proposed Land Use Element provide a framework to accommodate future development in an efficient and sustainable manner that is compatible with the character of existing neighborhoods and the protection of valuable and sensitive natural resources. The City of Ferndale has not been confronted with significant growth pressures in recent decades. However, even though population growth rates are low, the supply of land in urbanized areas capable of supporting development continues to decrease in the region.

To accommodate growth, the Land Use Element Update establishes increased residential densities and residential development opportunities in mixed use zones, encourages the provision of diverse housing choices, commercial facilities, and infrastructure to accommodate forecasted growth while protecting resource lands and the established character of existing neighborhoods.

The Safety Element is intended to provide an overview of potential hazards in the City and provide recommendations for decreasing those hazards so there is a lower risk to life and property. It has no potential for inducing growth, planned or otherwise.

CONCLUSION FOR IMPACT POP-01

The proposed Land Use Element Update accommodates the growth that is projected to occur within the City by HCD. The Land Use Element Update does not propose any specific development proposals or contain policies that are intended to induce growth.

The proposed policies in the Land Use Element address how growth is intended to be accommodated. The Land Use Element Update includes a Planned Development policy to reduce impacts of new development on existing infrastructure. The Land Use Element Update also provides for a slight increase in planned urban residential densities in a few cases, increasing infill opportunities and urban- serviceable development, as well as maintaining or increasing densities in other areas. Such policies are not intended to induce growth but would accommodate growth to the greatest extent possible within developed areas that can best provide needed community services.

The Land Use Element is a comprehensive plan to guide appropriate and efficient future growth of the City. Infill development promoted by the general plan would minimize pressure to develop the greenspace and forests surrounding the City, reducing development pressure directly outside the City limits. The Land Use Element includes several policies that would ensure responsible, planned development within the City and would encourage development near existing infrastructure, utilities, and services. Adoption and implementation of the Land Use Element would not result in the direct or indirect inducement of unplanned population growth.

The Land Use Element Update guides future growth throughout the City and accommodates growth to the greatest extent possible within urbanized areas that can best provide needed community services. The Safety Element is intended to provide recommendations for decreasing risk to existing and new development from natural and man-made hazards so there is a lower risk to life and property. It has no potential for inducing growth, planned or otherwise. Therefore, the proposed Project would not result in the direct or indirect inducement of unplanned population growth and potential impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact POP-02: Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Finding POP-02: The act of updating the Land Use and Safety Elements and implementing those changes through adoption of zoning regulations is not anticipated to displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. This impact is considered less than significant.

The General Plan is a long-range land use plan that defines development patterns and establishes guidance for future growth in the City, including the development of housing. The General Plan Update Land Use Element is intended to support growth within urban areas, maintain levels of development elsewhere, and increase resource production land protections. A substantial portion of the population growth projected by the Department of Finance would be expected to occur in areas within existing infill areas and is intended to occur in a manner that maintains the characteristics of existing neighborhoods.

Through its 2019 Housing Element Update, the City conducted an analysis of housing unit capacity within the City. The housing inventory analysis was informed by infrastructure analysis completed to satisfy requirements of state planning law and provided the basis for the Housing Element housing inventory and the land use projections for the Land Use Element Update. The development capacity analyses described above confirm that the proposed Land Use map would allow for an adequate number of dwelling units to meet the projected population growth within the City, and additional housing outside the City would not be required to accommodate demand.

The Land Use and Safety Element Update does not contain specific development projects; rather it contains policies and applies land use designations to guide development within the City. The implementation of the proposed Land Use and Safety Element Update would generally retain the existing land use pattern of the City.

ANALYSIS OF CHANGES TO THE LAND USE MAP

The current General Plan documents Ferndale has a supply of land which can accommodate more new homes than the anticipated demand between 2023 – 2045 under this EIR's high-growth scenario. This evidence suggests the City can accommodate sufficient new growth in areas to meet its projected housing demand without displacing existing homes or businesses.

ANALYSIS OF CHANGES TO THE LAND USE POLICIES AND IMPLEMENTATION MEASURES

The Land Use and Housing Elements contain a series of policies intended to assure adequate land for new development within the City:

- Housing Element Implementation Program 1 requires that the City maintain an adequate supply of residentially zoned land to meet projected housing needs.
- Pursuant to the Land Use Element, areas with existing infrastructure service and capacity are intended to accommodate the levels of development that are projected to occur over the 20-year planning period of the General Plan.
- Implementation Program 9 of the Housing Element commits the City to continue to apply for Federal and State funding for infrastructure improvements and expansion throughout the City as outlined in the Drainage Master Plan and other Planning Documents.
- Drainage continues to be an issue for the City and surrounding area. Addressing drainage issues is therefore a main priority for Ferndale. Ferndale has a Drainage Master Plan that outlines prioritized projects and project costs; the majority of the proposed infrastructure projects are prohibitively expensive to undertake without grant funding. The intent of this program is to both 1) continue to analyze how drainage may affect development, and 2) pursue funds to address these drainage issues.

CONCLUSION FOR IMPACT POP-02

Development during the planning period for the General Plan is not expected to displace substantial numbers of people or housing units necessitating the construction of new units elsewhere. The Land Use Element and Safety Element Updates do not contain specific development projects; rather they contain policies, and the Land Use Element applies land use designations to guide development within the City. The proposed Land Use Element Update policies described above would lessen potential impacts to the displacement of people or housing by providing more than sufficient land to accommodate growth during the planning period. The Safety Element is intended to provide recommendations for decreasing risk to existing and new development from natural and man-made hazards so there is a lower risk to life and property. It has no potential for displacing people or housing. Therefore, the Land Use and Safety Element Updates would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere. Therefore, impacts relating to the displacement of people or housing resulting from the Land Use and Safety Element Updates would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

California Department of Finance. 2023. "Population Estimates Population and Housing Estimates for Cities, Counties, and the State, January 1, 2021-2023, with 2020 Benchmark." *State of California Department of Finance.* May. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2023/.

California Department of Finance. 2023. *Projections.* Accessed August 23, 2023. https://dof.ca.gov/forecasting/demographics/projections/.

California Department of Housing and Community Development. 2018. *Final 6th Cycle Regional Housing Need Determination for Humboldt County .* Division of Housing Policy Development.

Department of Finance. 2021. "E-3 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020 with 2010 Census Benchmark." *CA Gov.* May. https://dof.ca.gov/forecasting/demographics/estimates/estimates-e5-2010-2020/.

Humboldt County Association of Governments. 2019. "2019 Humboldt COunty Regional Housing Needs Assessment Plan." *Humboldt County.* March 21. https://humboldtgov.org/DocumentCenter/View/78290/71119-PC-version-Attachment-F---2019-Final-PDF?bidId=.

State of California, Department of Finance. 2023. *E-Population Estimates for Cities, Counties, and the State with Annual Percent Change - January 1, 2022 and 2023.* May. https://dof.ca.gov/forecasting/demographics/estimates-e1/.

US Census Bureau. 2021. *American Community Survey 2021 5-year Estimates - B2501 Occupancy Characteristics.* Ferndale. Accessed August 23, 2023. https://data.census.gov/table?t=Employment&g=160XX00US0623910&tid=ACSDP5Y2021.DP03.

—. 2023. "QuickFacts." *US Census Bureau.* https://www.census.gov/quickfacts/fact/table/.

US Census Bureau, ACS . 2023. *Point2Homes.* Accessed August 23, 2023. https://www.point2homes.com/US/Neighborhood/CA/Ferndale-Demographics.html.

4.16 PUBLIC SERVICES

This section summarizes public services including fire and police protection, public schools, and other public facilities that serve the City and an assessment of the potential impacts of implementing the proposed Land Use and Safety Element Updates. A detailed analysis of parks and recreation resources can be found in Section 4.17 Recreation. This section incorporates information and analysis from the 2022 Ferndale High School, School Accountability Report Card (SARC); 2021 Ferndale Elementary School SARC; 2018 City of Ferndale Municipal Service Review (MSR); 2017 Eel River Valley-Lost Coast Regional Fire Services MSR; and the 2017 Humboldt County General Plan Update Final EIR.

ENVIRONMENTAL SETTING

The City of Ferndale is responsible for delivering public services including, but not limited to, stormwater management, police protection, and parks and recreation facilities, all of which help ensure the health and well-being of City residents. Public education is provided by the Ferndale Unified School District which serves elementary, middle, and high school education for area residents. The City also has a historic local library that is a branch of the Humboldt County Public Library system. See Section 4.17 Recreation for analysis of parks and recreation.

Fire Protection

Formed in 1897, the Ferndale Volunteer Fire Department (VFD) is based out of the fire station located at 436 Brown Street in Ferndale. They operate with a dedicated team comprised of one fire chief, two assistant chiefs, four companies of volunteers (each led by a captain and a lieutenant), and a fifth company comprised of retired members. They currently have 22 active fire personnel on their roster (DelBiaggio, 2023).

Annually, the VFD responds to around 200 calls for assistance encompassing a range of incidents including fires, medical emergencies, vehicle accidents, and more (Humboldt LAFCo, 2018). The five-year average for calls for assistance is 206 calls; in 2015, the VFD responded to 227 calls for service which is a slight increase from the five-year average. Incident responses increased to 262 in 2021 and are detailed in Table 4.16-1 below. Ferndale VFD has identified "maintaining a strong volunteer base with increasing training requirements and an increasing number of calls each year" as a challenge and need moving forward (Fire Chief's Association of Humboldt County, 2023).

Table 4.16-1: 2021 Ferndale VFD Incident Responses

Incidents	# of Responses
Vegetation Fires	8
Structure Fires	7
Other Fires	13
Vehicle Accidents	11
Medical	181
Hazmat/Menace	14
Public Assistance	13
Other Services	15
Total Responses	***262***

Source: (Fire Chief's Association of Humboldt County, 2023)

Ferndale VFD collaborates closely with neighboring fire departments through mutual and automatic aid agreements in addition to being a member of the Eel River Valley Fire Chiefs Association, ensuring enhanced fire protection services for the local community. The Ferndale VFD is an integral part of the broader Ferndale Fire

Protection District (FPD) which was formed in 1934. The District has since assumed responsibility for fire protection from the Ferndale VFD, and the VFD now delivers fire protection services on behalf of the Ferndale FPD (Humboldt LAFCo, 2017).

Operating as an independent single purpose special district, the Ferndale FPD serves as the primary provider of essential fire, rescue, and emergency medical services. Its jurisdiction extends beyond the City of Ferndale, encompassing over 44.2 square miles of area including the surrounding unincorporated communities of Grizzly Bluff, Arlynda Corners, Centerville, Port Kenyon, Wildcat Ridge, and regions to the south of the Eel River. Ferndale FPD also provides "good will service" to an additional nearly 59 square miles of area outside of District boundaries. Fire dispatch services are provided by the CAL FIRE Interagency Command Center.

Ferndale FPD has only one fire station which is the historic Ferndale FVD location built in 1910. Across from the fire station on Brown Street is an additional building used as an annex and equipment bay. Housed at this location are three engines (two Type-1 engines and one Type-2 engine), two water tenders, a rescue vehicle, a wildland quick attack engine, and two Polaris UTV's. Other equipment includes around 20 self-contained breathing apparatuses, 38 structural and 10 wildland personal protective equipment for the firefighters, one thermal imaging camera, 24 handheld radios, one GPS system, five AEDs, and a CPR Lucas device (Humboldt LAFCo, 2018; Fire Chief's Association of Humboldt County, 2023). The Ferndale FPD is able to acquire new equipment and apparatus from a special assessment paid out from part of property taxes by property owners within the District (Humboldt LAFCo, 2017). These funds are used to replace an engine every 5-10 years resulting in an average age of apparatus between 10-20 years old.

Beyond their emergency response duties, the Ferndale FPD engages in various community outreach initiatives, such as fire extinguisher clinics for local businesses, the decoration and removal of Ferndale's Christmas Tree lights, and the provision of fire safety education programs to youth at the Children's Center, Ferndale Elementary, and the High School (Humboldt LAFCo, 2018; Fire Chief's Association of Humboldt County, 2023). The department actively supports local youth interested in public service through grants and hosts blood drives, maintaining a vital blood bank for the community. Moreover, in partnership with the Boy Scouts of America, the Ferndale FPD has recently introduced a youth Explorer Program, providing students aged 14-18 with opportunities to learn about the fire department while actively participating in departmental training and drills. The Ferndale FPD's commitment to safeguarding lives and property is underscored by its continuous training efforts, monthly meetings, and diligent maintenance of equipment.

Police Protection

Law enforcement in the City of Ferndale is provided by two agencies: the Ferndale Police Department and the Humboldt County Sheriff's Office (HCSO). The Police Department provides law enforcement and public safety services within the City limits and the HCSO provides services in the adjacent unincorporated areas. In the event additional aid is needed, officers from other nearby agencies will respond including Eureka, Rio Dell, California Highway Patrol, and the California Department of Fish and Wildlife.

The Police Department is located at 600 Berding Street in Ferndale and was established in 1893 (Ferndale Police Department, 2022). The Department has a police chief, one sergeant, and seven officers, three of which are reserve (City of Ferndale, 2023). The Ferndale Police Department works closely with other Eel River Valley municipal police departments, including Fortuna and Rio Dell. Fortuna Police Department provides dispatch service for all three departments. These departments provide coverage (backup officers) to each other in a variety of critical incidents and large events.

The Ferndale Police Department was awarded Humboldt County Measure Z funds in 2016 and 2017 to purchase new patrol vehicle repeaters, a radio repeater upgrade (for all three Eel River Valley Departments), and a four-wheel drive vehicle outfitted with emergency equipment to improve the Department's level of service capabilities. The Department also has military equipment which includes one high mobility multipurpose wheeled vehicles (HMMWV) with a large cargo "ambulance" cargo box and five Colt AR-15 rifles (Sligh, 2023).

Public Education

Public school services in the City of Ferndale are provided by the Ferndale Unified School District which currently operates Ferndale Elementary School (FES) and Ferndale High School (FHS). There are currently approximately 470 students enrolled in the District with an Elementary Teacher to Student Ratio of 20:1 and a High School Teacher to Student Ratio of 18:1 (About Us, 2023). In 2018-2019, there were 350 students at the elementary school and 160 students at the high school (Humboldt LAFCo, 2018). At present, Ferndale Elementary School serves approximately 345 students from Transitional Kindergarten (TK) through 8th grade and Ferndale High School serves about 125 students from 9th-12th grades.

The main building of FES was constructed in 1924 and comprises two floors (Ferndale Elementary School, 2021). The upper level accommodates essential facilities such as the main office, principal's office, six classrooms, a counseling room, a speech room, and two staff bathrooms. Meanwhile, the basement houses three classrooms, including the Expeditionary Learning room, a staff workroom, custodial and storage spaces, and two student bathrooms. Connectivity between the floors is facilitated by an elevator and two stairways.

The school has undergone several renovations including the addition of a modern primary wing in 2001 featuring eight classrooms, a library, a computer lab, a reading room, and a staff lunchroom. The school's sports facilities were previously expanded with the construction of a full-size gym in 1967, which was further complemented by the addition of a multipurpose room in 2001. In 2008, more significant enhancements were made to the school's infrastructure, including the installation of a new heating system and the remodeling of the kitchen. The school's facilities were rated good overall in their School Accountability Report Card for 2021.

The main building of FHS was constructed in 1952 and contains the school office, 11 classrooms, and the school library (Ferndale High School, 2022). There is an adjacent shop building that accommodates both the woodshop and agricultural mechanic's shop. The gymnasium, a 1975 addition with a seating capacity of 881, encompasses essential spaces like men's and women's locker rooms, as well as coaches' offices. As outlined in their facilities master plan, future developments include the construction of a classroom/office building to replace a portable structure removed in 2004 and modernization of the main high school building. The buildings require general maintenance requirements as a result of their age and have attempted twice unsuccessfully (in 2016 and 2022) to pass a school bond measure to address water intrusion, ADA upgrades, and deterioration of the facilities. As a result, the school's facilities were rated fair overall in their School Accountability Report Card in 2022. Despite the need for improvements, the current facilities adequately cater to the instructional program at Ferndale High School, providing sufficient space to support educational endeavors.

During the summer of 2023, the school district successfully executed a series of maintenance projects which primarily included the renovation of existing classrooms and the construction of a new classroom. Additional improvements include installed hydration stations, replaced damaged whiteboards, installed new carpet in two classrooms, installed roller shades, modernized desks and chairs in three classrooms, remodeled the FHS and FES conference rooms, created a new attendance office at FES, renovated a new space for in-person speech services at FES. The new classroom was a modular for FES to allow for their after-school program to have operating space,

along with workspace for student services such as Occupational Therapy, Special Education Director, Technology storage, Math Intervention, and other operational needs (Carmesin & Griffith, 2023).

Local School Districts have several avenues to secure funding for their portion of the expenses associated with new construction or modernization projects (Humboldt County, 2017). These sources include (1) school general funds or donations; (2) local general obligation bonds; (3) impact fees; and (4) Mello Roos Community Facilities District bond funds. In the case of Humboldt County schools, aside from relying on school revenue and donations, they commonly utilize general obligation bonds and impact fees to finance local shares of school facility projects. The Ferndale School District has implemented a fee program as part of its funding strategy. Impact fees, levied on new developments within the district, are collected at the City and County building permit counters on behalf of the School District. Typically, property owners and developers are tasked with contributing a portion of the expenses associated with new school facilities.

The State of California School Facility Program offers a pathway for K-12 School Districts to seek funding for land acquisition, new building construction, and the modernization or renovation of existing structures. The funding allocation for a School District is determined by a formula that takes into account the projected enrollment of students that cannot be accommodated in existing facilities. This program mandates a cost-sharing arrangement between the State and School Districts. For new construction projects, the cost is evenly split, while for modernization projects, the state covers 60 percent, and School Districts contribute 40 percent of the expenses. In instances where a School District faces unique challenges, it has the option to apply for "hardship" funding from the State to alleviate its local share of costs.

Other Public Facilities

Originally built as a Carnegie Grant Library in 1909 on land donated by the City, the Ferndale Public Library is a functional historical landmark located at 807 Main Street in Ferndale (Edeline, 1996). Originally supported and funded by the City, the library transitioned to become part of the Humboldt County Library system in 1915 (National Park Service, 1990). It has the distinction of being the last Carnegie Library in northwestern California that still functions as a Public Library, and they are now in their second decade of serving the community. The library operates under the governance of the Ferndale Library Board, whose members serve four-year term appointments (Hall, 2022). The library offers library cards free of charge to Humboldt County residents with a permanent local address and offers free computers with up to an hour of internet access. The library is normally open Tuesday-Saturday from 12-5 pm aside from Friday, when it closes an hour earlier at 4 pm.

REGULATORY SETTING

STATE

California Fire and Building Code

The State of California provides minimum standards for building design through the California Building Code (CBC), which is in Part 2 of Title 24, California Building Standards Code, of the California Code of Regulations (CCR). The CBC is based on the International Building Code but has been amended for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California State Assembly Bill (AB) 2926

California State Assembly Bill (AB) 2926 – School Facilities Act of 1986 – was enacted by the State of California in 1986 and added to the California Government Code (Section 65995). It authorizes school districts to collect development fees, based on demonstrated need, and generate revenue for school districts for capital acquisitions and improvements. It also established that the maximum fees which may be collected under this, and any other school fee authorization are $1.50 per square foot ($1.50/ft2) for residential development and $0.25/ft2 for commercial and industrial development. AB 2926 was expanded and revised in 1987 through the passage of AB 1600, which added Section 66000 et seq. of the Government code. Under this statute, payment of statutory fees by developers serves as total mitigation under CEQA to satisfy the impact of development on school facilities. However, subsequent legislative actions have alternatively expanded and contracted the limits placed on school fees by AB 2926.

California Senate Bill 50

As part of the further refinement of the legislation enacted under AB 2926, the passage of SB 50 in 1998 defined the Needs Analysis process in government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity because of development. SB 50 generally provides for a 50/50 State and local school facilities match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available; whether the school district is eligible for State funding; and whether the school district meets certain additional criteria involving bonding capacity, year-round schools, and the percentage of moveable classrooms in use.

California Government Code sections 65995-65998 set forth provisions to implement SB 50. Specifically, in accordance with section 65995(h), the payment of statutory fees is “deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization…on the provision of adequate school facilities.” The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Pursuant to Government Code section 65995(i), “A State or local agency may not deny or refuse to approve a legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization as defined in section 56021 or 56073 on the basis of a person's refusal to provide school facilities mitigation that exceeds the amounts authorized pursuant to this section or pursuant to section 65995.5 or 65995.7, as applicable.”

California Education Code section 17620(a)(1) states that the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities.

Regional and Local

Ferndale Municipal Ordinances

Subdivision Ordinance 99-04 Section 1.802 Reservations

In compliance with Subdivision Ordinance 99-04 Section 1.802, a subdivider seeking Map approval is mandated to set aside suitable sites for parks, recreational facilities, fire stations, libraries, or other public uses. The standards and formula for this reservation are specified in this Section or as directed by the City Council. Additionally, if a park or public facility is identified in an adopted Specific or General Plan, the City may require the subdivider to reserve sites according to the principles and standards outlined in the respective plan. The reserved area should facilitate orderly development without rendering the remaining property economically unfeasible. The size and

shape of the reserved area must conform to the adopted Specific or General Plan and allow for efficient division in case of non-acquisition within the prescribed period.

ZONING ORDINANCE 02-02

Under Zoning Ordinance 02-02, vacation rentals must adhere to specific development standards. If the owner or contact fails to respond to emergencies or disturbances of the peace more than twice within a 12-month period, or if there are more than two documented law enforcement violations in any 12-month period, the vacation rental permit may be revoked. The City reserves the right to revoke a permit if the vacation rental consistently violates the chapter's provisions or fails to address Building or Fire Code violations promptly. Noteworthy violations include documented citations, written warnings, or other records maintained by law enforcement, the Fire Department, or the Building Department. Additionally, vacation rentals with gated entries must have a Fire Department-approved device allowing emergency response access to the property.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to public services from implementation of the Project would be significant if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

- fire protection;
- police protection;
- schools;
- parks; or
- other public facilities.

An in-depth analysis of the Project's impact on parks is discussed in Section 4.17 Recreation and is not further discussed in this section.

PROJECT IMPACTS AND MITIGATION

Impact PS-01: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection facilities?

Finding PS-01: Implementation of the Land Use Element and Safety Element Updates would facilitate development in Ferndale. The increase in population would likely increase demand for fire protection services, but not to the extent that new facilities are required. Therefore, impacts associated with fire protection services from implementation of the Land Use Element and Safety Element Updates are expected to be less than significant.

The Land Use Element Update guides future growth in the City. The land use map identifies areas for development of residential and commercial land uses, as well as roads and other infrastructure, to accommodate forecasted

population growth. Based on the population and housing projections in Chapter 3 of this EIR, as many as 85 new housing units are anticipated to be constructed during the 20-year planning period. The Safety Element provides an overview of potential hazards in the City and directs policies and implementation programs for decreasing those hazards so there is a lower risk to life and property.

Implementation of the proposed Land Use Element Update is unlikely to result in the need for physical alterations and construction relating to the provision of fire protection services. The Ferndale FPD has three engines to respond to an average of 262 incidents per year. In comparison to other local fire districts, this is a far lower ratio of engines to incident calls (one engine per 90 calls). For instance, the Arcata Fire Protection District has three engines to respond to more than 3,000 incidents each year, which is one engine per 1,000 incident calls (Arcata Fire District, 2024). The facilities now operated by the Ferndale FPD have additional capacity that could be used for additional equipment to respond to incident calls.

The Safety Element Update contains policies and implementation programs directing the City to proactively coordinate with service providers, monitor service capacity in relation to planned development, fund services, and provide the infrastructure needed to serve the development allowable under the updated General Plan. For example, Safety Element Policy 3.1 requires the City to coordinate with the Ferndale FPD to maintain adequate fire protection staffing levels, equipment, and facilities to reduce risk of fire to persons and property within the City, and to mitigate impacts of new development on the City's ability to maintain adequate service levels. And Implementation Program 3f commits the City to refer all development proposals to the Ferndale Volunteer Fire Department for comment on measures necessary to mitigate or reduce fire hazards.

Because of the infill growth pattern promoted by the Land Use Element, no expansion of the City limits is expected. Therefore, the geographic response area of Ferndale FPD remains the same and response times are not anticipated to increase based on call distance from the station. However, as the population increases, the call volume would be expected to rise proportionally. Finally, if new fire facilities were deemed needed for new development, the exact location and extent of facility improvements or expansion is not known at this time and would likely be based on future call distribution in order to most effectively serve the community. Ferndale FPD would be required to address the potential environmental impacts of the development of additional or expanded fire facilities at that time. Through that review, the City would ensure that environmental impacts are addressed through appropriate site-specific measures and the application of the policies listed above, appropriate Zoning Regulations, and its land use authority. As a programmatic, policy-level analysis, the adoption and implementation of Land Use and Safety Elements would not result in significant environmental impacts caused from the alteration and construction of fire protection facilities to maintain acceptable service ratios and response times. Impacts would be less than significant

MITIGATION MEASURE

No mitigation measures would be required.

Impact PS-O2: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection facilities?

Finding PS-02: Implementation of the Land Use Element and Safety Element Updates would facilitate development in Ferndale. The increase in population would likely increase demand for police protection services. If expanded facilities are needed to serve the growth in population, the existing infill property where the police station is located has sufficient area without any sensitive areas to accommodate the required facilities. Therefore, impacts to police protection services from implementation of the Land Use Element and Safety Element Updates are expected to be less than significant.

The existing facilities where the City's police facilities are located is shown below in Figure 4.16-1. Proposed Land Use Map Change #10 occurs on this property and would change the designation from C-2 Community Commercial to PF Public Facilities to reflect the existing use of the property as a police station. This parcel is 0.5 acres in size.

Figure 4.16-1: Land Use Map Change #10 Detail



Because of the infill growth pattern promoted by the Land Use Element, no expansion of the City limits is expected. Therefore, the geographic response area of Ferndale Police Department remains the same and response times are not anticipated to increase based on call distance from the station. As shown in the figure, sufficient area exists on the parcel to roughly double the size of the existing facility, which would be expected to accommodate a 100 percent increase in population without impacting existing call response times. The vacant part of the property has no mapped biological, geological, soil stability, or 100-year flood hazards that would constrain the site from development, and it is surrounded by existing development. As a programmatic, policy-level analysis, the adoption and implementation of Land Use and Safety Elements would not result in significant environmental impacts caused from the alteration and construction of police protection facilities to maintain acceptable service ratios and response times. Impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact PS-O3: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school facilities?

Finding PS-03: Growth facilitated by implementation of the Land Use Element and Safety Element may result in more students in the Ferndale Unified School District. The increase in student population may increase service needs, but not to the extent that new facilities are required. Therefore, impacts from implementation of the Land Use Element and Safety Element is expected to be less than significant.

Public school services in the City of Ferndale are provided by the Ferndale Unified School District (FUSD) which currently operates Ferndale Elementary School (FES) and Ferndale High School (FHS). The Ferndale Unified School District boundary is much larger than the City boundary and Planning Area and extends north and east to the Eel River, south along Wildcat Road, and west to the Pacific Ocean. As of 2023 there were approximately 470 students enrolled in the District with 345 students at the elementary school and 125 students at the high school (About Us, 2023).

If the future population increase maintains the age distribution of the current population, the number of school-aged students (5 – 19 years old) will increase by a total of approximately 26 persons over the 20-year planning period, which would be distributed among all the classes. Alternatively, the FUSD recently completed a Facility Master Plan that estimates a student generation rate of 0.384 per dwelling unit. If 85 units are constructed in the 20-year planning period this would result in 33 new students. Other considerations for estimating school age children include the demographics of the increase, state fertility trends, and migration trends. Due to trends in fertility and migration, the State of California Department of Finance estimates a decrease in state-wide public kindergarten through twelfth grade enrollment over the next ten years (DoF 2022). Department of Finance projections for kindergarten through twelfth grade enrollment in Humboldt County for the 2030-2031 school year are approximately 13% lower than enrollment in 2010 and 11% lower than enrollment in 2022 (DoF 2022).

The FUSD Facility Master Plan found that the growth anticipated in the next 20-years is not likely to result in the need for new or expanded school facilities. However, many District facilities are over 25 years old and in need of improvements to continue housing existing students and students generated by new development at the existing level of service over the next 20 years (Consulting, 2024). California Government Code Section 65995 authorizes school districts to collect fees to offset the costs associated with increasing school capacity as a result of new residential and commercial/industrial development and related population increases. These development fees are deemed to be "full and complete school facilities mitigation," notwithstanding any contrary provisions in CEQA or other State or local laws. FUSD Board adopted development impact fees in 2024. Development facilitated by the Land Use Element that is located in areas subject to school impact development fees would be required to pay the adopted fees, therefore, fully mitigating potential impacts on those district school facilities. In addition, improvements to existing facilities are anticipated, however this would not result in substantial adverse physical environmental impacts, and no new facilities are anticipated to be constructed, therefore impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact PS-O5: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

Finding PS-05: Growth facilitated by implementation of the Land Use Element and Safety Element will likely increase demand for other public services, but not to the extent that new facilities are required. Therefore, impacts from implementation of the Land Use Element and Safety Element is expected to be less than significant.

As with the above services, the Land Use Element seeks to accommodate anticipated growth within the City of Ferndale over the next 20 years, which will in turn increase demand for other public services such as library access. The infill growth pattern identified in the proposed Land Use Element would not disperse populations that may require additional facilities to be constructed in new locations. Future needs could be met by providing additional staffing, potential expansion at existing facilities rather than construction of new facilities and coordinating with Humboldt County and community service and private organizations to provide public service facilities.

Land Use and Safety Element policies and municipal code standards ensure that any modifications or alterations to existing structures are consistent with the Ferndale's current standards and that the City can make appropriate determinations of public service needs and potential environmental effects associated with projects. Policies in the Safety Element seek to ensure public safety and maintain functionality of public facilities during emergencies such as earthquakes or flooding. For example, Policy 1.6 ensures that public facilities are structurally sound and able to withstand seismic shaking and the effects of seismically induced ground failure. These policies, alongside the ongoing monitoring of facilities for their sufficiency to meet future needs, will reduce potential impacts to a less than significant level.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

About Us. (2023). Retrieved from Ferndale Unified School District: https://www.ferndalek12.org/

Arcata Fire District. (2024). *Apparatus*. Retrieved from https://www.arcatafire.org/type-1-engine

Carmesin, D., & Griffith, J. (2023, August). *August Superintendent/Principal's Report.* Retrieved from Ferndale Unified School District: https://drive.google.com/file/d/1vSfwHsUiuAHTRXmgcFtIhzb0lvEMltmp/view?pli=1

City of Ferndale. (2023). *Police Department.* Retrieved from City of Ferndale: https://ci.ferndale.ca.us/departments/police/

Consulting, K. (2024). *Ferndale Unified School District: Developer Fee Justification Study.*

DelBiaggio, D. (2023, September 27). Fire Chief. ((Email), Interviewer)

Edeline, D. (1996, May 31). *Transcriptions from the Ferndale Enterprise and the Book of Deeds at the Humboldt County Court House from August 1893-December 31, 1931.* Retrieved from Wikipedia: https://web.archive.org/web/20110926221747/http://www.cagenweb.com/humboldt/FerndaleFinalNotes.pdf

Ferndale Elementary School. (2021). *2021-22 School Accountability Report Card Page 1 of 21 Ferndale Elementary School.* Retrieved from California School Dashboard: https://core-docs.s3.amazonaws.com/documents/asset/uploaded_file/980040/2021_School_Accountability_Report_Card_Ferndale_Elementary_School.pdf

Ferndale High School. (2022). *Ferndale High School 2021-2022 School Accountability Report Card.* Retrieved from The California School Dashboard: https://core-docs.s3.amazonaws.com/documents/asset/uploaded_file/1848/FUSD/2740558/2022_School_Accountability_Report_Card_Ferndale_High_School_20230210__1_.pdf

Ferndale Police Department. (2022, May 31). *Ferndale Police Department Policy Manual.* Retrieved from https://ci.ferndale.ca.us/wp/wp-content/uploads/Ferndale_PD_Policy_Manual-7-12-22.pdf

Fire Chief's Association of Humboldt County. (2023, April). *Humboldt County Fire Chiefs Association Report 2021.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/117366/2021-HCFCA-Annual-Report

Hall, K. (2022, January 31). *Library Board Vacancy.* Retrieved from City of Ferndale: https://ci.ferndale.ca.us/library-board-vacancy/

Humboldt County. (2017). *Humboldt County General Plan Revised Draft EIR 3.4 Public Services.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/58833/Section-34-Public-Services-Revised-DEIR-PDF

Humboldt LAFCo. (2017, January 18). *Eel River Valley-Lost Coast Regional Fire Services MSR.* Retrieved from HUmboldt LAFCO: https://humboldtlafco.org/msr-soi-reports/

Humboldt LAFCo. (2018). *City of Ferndale Municipal Service Review.* Humboldt LAFCO.

National Park Service. (1990, October 10). *National Register of Historic Places Registration Form.* Retrieved from National Park Service: https://npgallery.nps.gov/NRHP/GetAsset/NRHP/90001815_text

Sligh, R. (2023, May 3). *Staff Report.* Retrieved from City of Ferndale: https://ci.ferndale.ca.us/wp/wp-content/uploads/Annual-Military-Equipment-Report-2022.pdf

4.17 Recreational Resources

This section analyzes the impacts to recreational resources existing within and in the vicinity of the City of Ferndale due to the Project. This section incorporates information and analysis from the 2019 City of Ferndale Housing Element Initial Study (IS) and Negative Declaration (ND), as it applies to the proposed Project. The City of Ferndale and Ferndale Chamber of Commerce websites were also referenced.

Environmental Setting

Current Recreational Setting

Ferndale residents and visitors are fortunate to have easy access to a variety of outdoor recreation activities thanks to the City's proximity to the coastline and expansive redwood forests. While this proximity is advantageous, it is equally important to provide accessible outdoor recreational spaces within the City for those who may not have the means to travel or access other areas.

The information provided below presents a description of the recreational resources and facilities found within the Planning Area.

Russ Park

Russ Park is one of two parks within City limits maintained by the City of Ferndale. It spans approximately 105 acres in the hilly southern outskirts of the City. The park was created in 1920 when Mrs. Zipporah Patrick Russ generously deeded the land as a park and recreation grounds, with specific provisions to preserve its natural beauty and ecological value. Accessible from Bluff Street, roughly half a mile from the intersection of Berding and Bluff Streets, the park offers four scenic trails spanning approximately four miles, ideal for hiking and bird watching. It is a densely shaded area with steep hillsides covered in Sitka Spruce and Grand Fir. Volunteer efforts play a vital role in maintaining park features, including trails, signs, and picnic areas.

Firemen’s Park

Firemen's Park is the other park maintained by the City of Ferndale within City limits. It has approximately 5 acres of dedicated open space area situated along Berding Street and Francis Creek. The park offers a picnic area, barbecue pits, playground, softball field, basketball court, and multiple bocce ball courts. At the entrance, there is a native plant park dedicated to a longtime president of the Ferndale Garden Club known as Shirley’s Pocket Park. The park serves as a hub for various community events such as the annual Bocce Ball Tournament and Easter Egg Hunt, while also offering the option to reserve portions of the park for private parties. Additionally, the park’s parking lot is the location of the independently operated Ferndale Community Center.

Hadley Gardens

Opened in 2022, Hadley Gardens is a privately owned and maintained interpretive garden highlighting native vegetation from several ecosystems found in Humboldt County (Stroll Through Hadley Gardens, 2023). Nestled on less than an acre of land adjacent to the Shaw House Inn, the garden is situated at the intersection of Shaw and Main Street. These gardens pay tribute to the memory of Willis Dean Hadley—a cherished long-time resident of Ferndale and a passionate advocate for the protection and preservation of native ecosystems. Prior to his passing, Willis Dean Hadley established the William Dean Hadley (WDH) Foundation, dedicated to the stewardship of his properties in support of natural conservation. One of these properties became the site of Hadley Gardens, which the WDH Foundation created and continues to maintain for public enjoyment, free of charge. Notably, Hadley's whimsical spirit is reflected in the gardens through the presence of a Victorian-style dollhouse, previously located in Main Street's shopping district, that has been restored and relocated to the Hadley Garden. Additionally, the gardens feature a small-scale replica of Fern Canyon, a beloved regional natural attraction.

Humboldt County Fairgrounds

Another major recreational area within City limits is the Humboldt County Fairgrounds which is used for a variety of regional activities, including but not limited to fairs, rodeos, horse racing, and a temporary indoor ice rink. The Humboldt County Fairgrounds, which is owned and operated by the County in conjunction with the Humboldt County Fair Association, is located at the north end of the City between Van Ness Avenue and Arlington Avenue. The fairgrounds offer ample event space featuring amenities such as a racetrack, covered and uncovered arenas, corrals, and several exhibition spaces/halls. It also contains a 60 space RV park with additional grassy areas for tent campers with access to restrooms and showers.

REGULATORY SETTING

FEDERAL

There are no federal regulations pertaining to parks that are applicable to this analysis.

STATE

State Public Park Preservation Act

The State Public Park Preservation Act (California Public Resource Code Section 5400 – 5409) serves as the key tool for safeguarding and conserving parkland in California. It prohibits cities and counties from repurposing any publicly used park property for non-park purposes without providing compensation or replacement land, or both, to maintain a balance and prevent any loss of parkland and its associated amenities. This ensures the preservation and continuity of parks and their facilities.

California Parklands Act

The California Parklands Act (Pub. Res. Code Section 5096.141-5096.143) recognizes the significance of acquiring, developing, and restoring areas for recreation, both at the state and local level. The Act underscores the responsibility of local agencies to protect existing parks, recreation areas, and facilities from being repurposed for other uses.

Quimby Act

The Quimby Act (California Government Code Section 66477) grants cities and counties the authority to establish park dedication standards/ordinances that mandate developers to allocate land, contribute conservation easements, or make financial contributions toward the creation of parkland when subdividing properties. This ensures the integration of recreational spaces and amenities within new developments, promoting a balanced and sustainable community environment.

REGIONAL AND LOCAL

The City of Ferndale does not have a park standard or park dedication requirements, however the City's existing park to population ratio exceeds the State's recommended Quimby Act guideline of 3-5 acres of parkland per 1,000 residents. In 2020, Ferndale had a population of 1,387 people and the combined acreage for the two parks managed by the City of Ferndale (Firemen's Park and Russ Park) equals around 110 acres (Ferndale, CA Profile, 2020). This makes the current ratio of dedicated acreage of parkland per 1,000 residents in Ferndale 79.3.

City Zoning Code

There are several ordinances within the City of Ferndale Zoning Code pertaining to recreational activities, recreational facilities, and where they are permitted. The most relevant city zoning codes include §3.58 Public Use, §3.60 Recreational, §5.17 Public Facility or PF Zone, and §6.04 Recreation Combining or –X Zone. The city zoning codes permit a broad range of opportunities for public and private noncommercial recreational activities and facilities including campgrounds, parks, and playgrounds.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to recreation from implementation of the Project would be significant if it would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

PROJECT IMPACTS AND MITIGATION

Impact REC-01: Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Finding REC-01: Adoption and implementation of the Land Use Element could result in an increase in population, which could increase the use of existing neighborhood and regional parks or other recreational facilities. However, proposed policies and implementation measures, along with the City Municipal Code and regulations, would ensure the City would continue to plan for and maintain existing parks and recreational facilities at an acceptable level. Therefore, impacts to recreational facilities would be less than significant.

The Land Use Element serves as a comprehensive framework that combines the Open Space and Conservation Elements with guiding principles that balances improvements to public health, reduced infrastructure costs, enhanced local economies, and long-term environmental issues such as climate change and natural resources management, following Governor's Office of Planning and Research (OPR) Guidelines. Increased use of neighborhood parks or regional recreational facilities stemming from development could have an impact on recreational facilities without improvement. However, Land Use Element guiding principles include thoughtful growth as well as the protection, preservation, restoration, rehabilitation, and enhancement of open spaces and natural resources such as the recreational resources analyzed here.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.2 – Community Amenities • Policy LU-1.9 – Right-of-Way • Policy LU-1.10 – Community Space
Land Use Element	Goal LU-2	• Policy LU-2.2 – Tourism and Resident Services • Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities
Land Use Element	Goal LU-3	• Policy LU-3.5 – Forest Lands Preservation
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship
Safety Element	Goal 4	• Program 4.c

Implementation of the Land Use Element could result in an increase in population, which may increase the use of existing neighborhood and regional parks. However, new development such as higher-density neighborhoods or mixed-use areas would adhere to proposed policies such as LU-1.10 which regulates development and maintains the recreational space to population ratio by requiring the incorporation of small public spaces. Other proposed Land Use Element policies, such as LU-1.2 and LU-1.9, encourage the improvement of park furnishings and expansion of recreational spaces. Russ Park, in particular, has proposed policy LU-4.1 that would create additional sidewalks, bike trails, and parking areas along Bluff Street and Eugene Street to enhance visitor safety. Improvement of park facilities could potentially increase the utilization of park facilities but not a significant amount more than existing levels because the ratio of existing parks to population for the City of Ferndale already far exceeds the Quimby Act guidelines and the City is encouraging the acquisition and stewardship of more open spaces. Therefore, anticipated Project impacts to recreational facilities would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact REC-02: Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Finding REC-02: The Project does not directly involve construction or expansion of recreational facilities which might physically affect the environment negatively. Any potential construction or expansion of recreational facilities that could be encouraged by the Project's proposed policies or goals would require additional site-specific review and compliance along with existing building and zoning codes and other applicable regulations. Therefore, impacts to the environment from recreational facility construction or expansion would be less than significant.

As noted previously, guiding principles for the Land Use Element include thoughtful growth as well as the protection, preservation, restoration, rehabilitation, and enhancement of open spaces and natural resources. The Land Use Element and Safety Element do not mandate the construction of new or expanded recreational facilities. However, the Land Use Element includes policies that would encourage the expansion of recreational spaces.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.9 – Right-of-Way • Policy LU-1.10 – Community Space
Land Use Element	Goal LUI-2	• Policy LU-2.5 – Main Street Historic Area Preservation, Uses, and Activities
Safety Element	Goal 4	• Program 4.d

The Land Use Element does not include any site-specific designs or proposals, nor grant any entitlements for development of recreational facilities. Policies LU-1.9 and 1.10 promote the expansion of recreational spaces through the development of an extended trail network and the integration of small public areas in mixed-use and

higher-density neighborhoods. Future recreational projects envisioned in the City include new and expanded pedestrian and bicycle facilities, and open space. Given the nature and scale of such improvements (e.g., street furnishings, pavement striping and signage, bicycle racks, playgrounds, benches, gardens, etc. in existing developed areas), the construction of such improvements could result in limited environmental effects, including release of air emissions associated with construction equipment, inadvertent archaeological discoveries, and temporary noise impacts; however, as future recreational facility construction or expansion projects are considered by the City, each project will be evaluated for conformance with the General Plan, Municipal Code, and other federal, state, or local applicable regulations.

In the event that any expansion or construction is proposed as a result of these elements, new park facilities would be required to adhere to relevant building and zoning codes and undergo additional CEQA review to evaluate project-specific impacts. Apart from impacts disclosed in the relevant chapters for this Draft EIR, there are no additional significant adverse environmental impacts that are anticipated to occur associated with existing or new parks and recreational facilities. As a result of the proposed policies and potential impacts of development evaluated in this Draft EIR, the physical effects on the environment from the construction of new or expanded parks and other recreational facilities would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Ferndale, CA Profile. (2020). Retrieved from Data USA: https://datausa.io/profile/geo/ferndale-ca

Stroll Through Hadley Gardens. (2023). Retrieved from Visit Ferndale - Ferndale Chamber of Commerce: https://www.visitferndale.com/hadley-gardens

4.18 TRANSPORTATION AND CIRCULATION

This section of the Environmental Impact Report (EIR) assesses the impact of the proposed Project on the transportation and circulation systems of the City of Ferndale. The analysis includes impacts on existing and future traffic patterns, transportation-related facilities, and other transportation infrastructure such as roadway, bicycle, pedestrian, and transit facilities.

ENVIRONMENTAL SETTING

The City's transportation system includes roadways, bicycle, and pedestrian facilities. The setting represents the physical and relevant operational transportation conditions under 2023 baseline conditions except for VMT. The VMT estimates contained in this analysis were from the 2021 Daily Vehicle Miles Traveled (DVMT) data provided by Caltrans.

EXISTING ROADWAY SYSTEM

The City of Ferndale has approximately 7.4 miles of paved streets with an average PCI of 58 as of 2014 (American Society of Civil Engineers, 2014). The physical characteristics of the City's roadway network are described below using the Federal Highway Administration's classifications. Table 4.18-1 and Figure 4.18-1 show the functional classifications of the City's street network. Many of the City's streets have been reported by residents and City staff to be in poor condition and in need of repair. However, due to the City's limited amount of funding for road maintenance, only a limited number of projects can be completed every year.

Table 4.18-1: Functional Classification of the Roadway Network

Arterials	Collectors	Local Streets
Arterials are intended to move large volumes of traffic, and to serve motor vehicles, bicycles, and pedestrians.	Collectors are intended to direct traffic from local roadways and carry it to arterials, highways, and freeways. Collectors typically have one lane of traffic in each direction.	Local streets typically carry less than 5,000 vehicles per day. Speed limits on local roadways are set at 25 miles per hour.
• No roadways have large enough volume to be classified as arterials.	**Major Collectors** • Main Street • Arlington Avenue • 5th Street • Ocean Avenue • Wildcat Road • Washington Street • Bluff Street • Crowley Avenue • Lincoln Avenue • Grant Avenue **Minor Collectors** • Shaw Avenue • Berding Street • Rose Avenue • Berding Street • Market Street	• California Street • Washington Road • Bluff Street • Van Ness Avenue • Milton Avenue • Lincoln Street • Tennyson Avenue • Madison Street • Arlington Avenue • Howard Street • Fairview Drive • Captain Cook Circle • Trident Lane • Vanston Avenue • Fern Street • Lewis Avenue • A Street • Shamsi Court • 3rd Street • 4th Street • Pixley Street • Dewey Street • Cream Court • Jacobson Way • McKinley Street • Schley Avenue • Watson Avenue • Blackberry Court • Brown Street • Francis Street • Craig Street • Emerson Lane • Eugene Street • Cleveland Street

Source: Caltrans, California Road Systems – Functional Classification, 2023[1]

STATE HIGHWAYS

California State Route 211 (SR 211) serves as a major collector between U.S. 101 at Fernbridge and Ferndale. Fernbridge, part of SR 211, serves as the closest connection over the Eel River. It has a historical significance dating

[1] https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538

back to its construction, completed in 1911, where at the time, it was the longest arch concrete span in the world. Despite natural disasters over the years, including floods and earthquakes, Fernbridge has remained the primary transportation route to the City of Ferndale. In March 2023, the California Transportation Commission (CTC) was informed about an Emergency G-11 Allocation under Caltrans delegated authority, amounting to $7,800,000 for the repair of Eel River Bridge on SR 211 near Ferndale, following significant damage caused by an earthquake on December 20, 2022. The proposed repair project addresses structural damage to various parts of the bridge and aims to replace the bridge railing and implement erosion control.

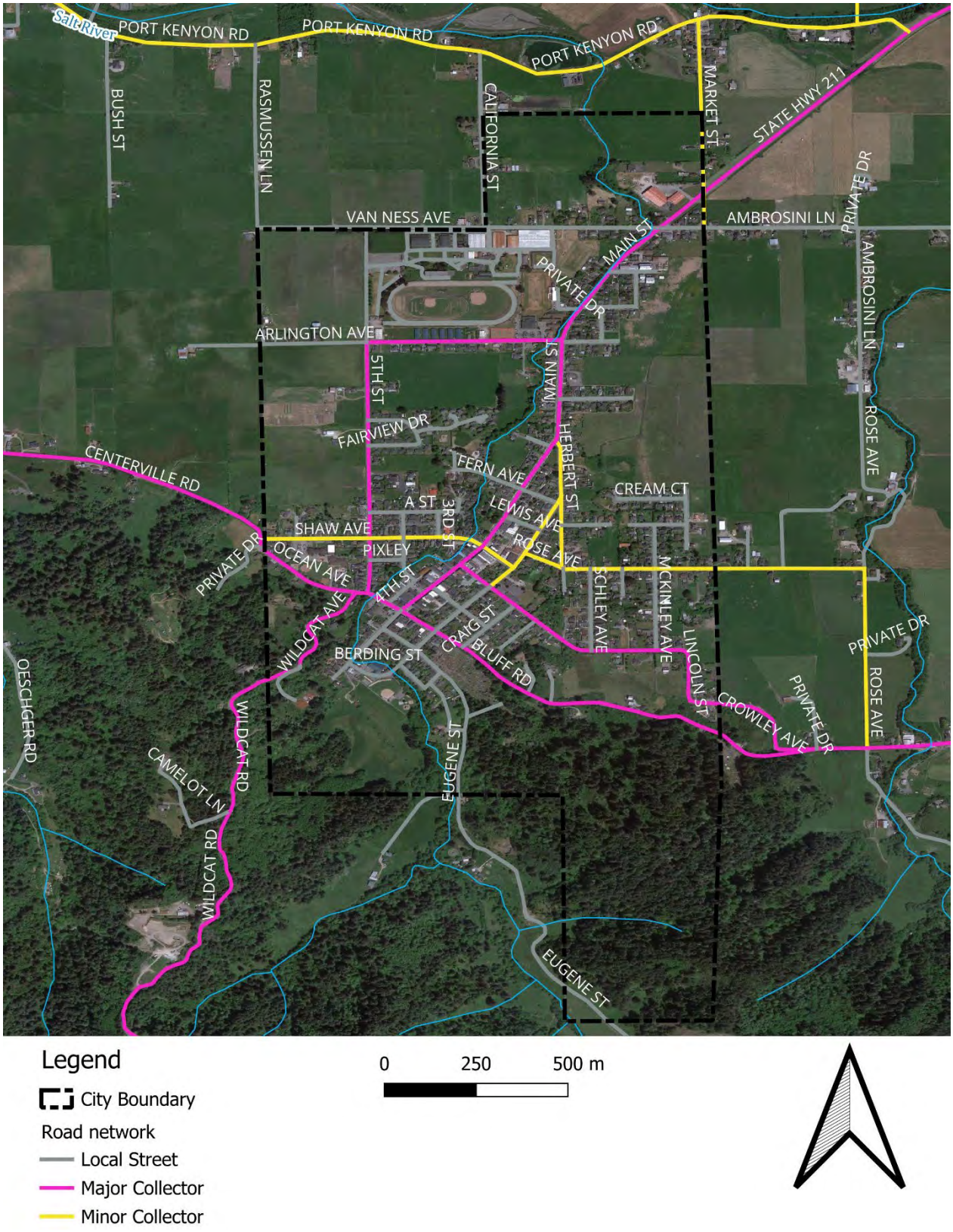
PEDESTRIAN & BICYCLE FACILITIES

Pedestrian facilities include a variety of public infrastructure to accommodate and promote walking. Sidewalks and trails are the general features that facilitate walking to destinations while amenities, such as benches, pedestrian-scaled lighting, shade trees, protected crossing, and transparent store frontages help create comfortable and enjoyable walking environment. Some of these features exist in Ferndale generally in the downtown area, especially along Main Street.

TRANSIT SERVICE

Currently there is no bus service to Ferndale provided by the Redwood Transit System, the public transit system serving the region.

Figure 4.18-1: Functional Classification of the Roadway Network



Source: Planwest Partners, 2024

REGULATORY SETTING

FEDERAL

U.S. Department of Transportation

The U.S. Department of Transportation (DOT) is the umbrella agency for federal transportation policies and regulations. The DOT's stated goals are to keep the traveling public safe, increase national mobility, and support the national economy through the transportation system. The DOT oversees several agencies that administer federal statutes for various branches of transportation, including:

- The National Highway Traffic Safety Administration, which is responsible for motor vehicle and highway transportation safety standards and regulations.
- The Federal Highway Administration, which is responsible for laws pertaining to commercial freight and the maintenance and preservation of interstate highways, tunnels, and bridges.
- The Federal Motor Carrier Safety Administration, which is responsible for safety regulation laws for large commercial vehicles.
- The Federal Railroad Administration, which is responsible for regulating the safety and development of the U.S. railroad system.
- The Federal Transit Administration, which provides financial and technical assistance to local public transportation systems.

These agencies support state and local governments in the design, construction, and maintenance of transportation systems through various programs and projects. The hierarchy of roadways in Ferndale follows the Federal Highway Administration Functional Classification Guidelines including arterials, collectors, and local roads. Functional classification is the process by which streets and highways are grouped according to the character of service they are intended to provide.

Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the United States Access Board, an independent Federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. The guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

STATE

California Complete Streets Act

Assembly Bill (AB) 1358 or the California Complete Streets Act, was signed into law on September 30, 2008. Since January 1, 2011, AB 1358 has required circulation element updates to address the transportation system from a multimodal perspective. AB 1358 states that streets, roads, and highways must "meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the General Plan." The act requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit. In addition, AB 1358 requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, and maintaining all state highways. The jurisdictional interest of Caltrans includes state highways and facilities and extends to improvements to roadways at the interchange ramps serving area freeways. Any federally funded transportation improvements would be subject to review by Caltrans staff and the California Transportation Commission. Any work or traffic control within the state right of way requires an encroachment permit issued by Caltrans. Improvements to intersections along SR 255 and interchanges with SR 101 or SR 299 will require coordination with Caltrans and an encroachment permit.

Senate Bill 743

SB 743, passed in 2013, required the Governor's Office of Planning and Research (OPR) to develop new State CEQA guidelines that address transportation impact metrics under CEQA. On December 28, 2018, the CEQA Guidelines were amended to add Section 15064.3 determining the Significance of Transportation Impacts, which states that generally, VMT is the most appropriate measure of transportation impacts. In addition to making VMT the preferred metric, Section15064.3(a) also prohibited the use of delay from being used to determine environmental impacts stating, "Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact." This prohibition is reinforced by the CEQA Statute 21099(b)(2), "Upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." Beginning on July 1, 2020, the provisions of 15064.3 and 21099 applied statewide.

This new approach significantly modifies how transportation impacts are considered in EIR's. Before these new laws became effective, communities were focused on ensuring roads and intersections had sufficient capacity for efficiently moving automobiles within and through an area, generally leading to construction of larger roadways and intersections. With the recent changes in state law, communities are now directed to ensure the number of miles traveled by people in cars (Vehicle Miles Traveled or VMT) is kept to a minimum, which can often best be achieved through projects and programs supporting alternative (non-automotive) modes of travel including bicycles, pedestrians, and public transit.

Technical Advisory on Evaluating Transportation Impacts in CEQA

The Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) (Governor's Office of Planning and Research, December 2018) provides advice and recommendations to CEQA lead agencies on how to implement SB 743. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, and mitigation measures to reduce VMT. Lead agencies may consider and use these recommendations at their discretion.

The Technical Advisory also provides guidance on impacts on transit. Specifically, the Technical Advisory suggests that lead agencies generally should not treat the addition of new transit users as an adverse impact. As an example, the Technical Advisory suggests that "an infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

The Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG) (Caltrans, May 20, 2020) provides directions to lead agencies regarding compliance with SB 743 from Caltrans' perspective. The TISG replaces the Caltrans' 2002 Guide for the Preparation of Traffic Impact Studies and is for use with local land use projects. The TISG largely endorses the OPR Technical Advisory for VMT impact analysis and includes the following objectives.

- Guidance in determining when a lead agency for a land use project or plan should analyze possible impacts to the state highway system (SHS), including its users.
- Guidance for Caltrans land use review that supports state land use goals, state planning priorities, and GHG emission reduction goals.
- Statewide consistency in identifying land use projects' possible transportation impacts, to the SHS, and to identify potential non-capacity increasing mitigation measures.
- Recommendations for early coordination during the planning phase of a land use project to reduce the time, cost, and/or frequency of preparing a Transportation Impact Study or other indicated analysis.

Interim Local Development and Intergovernmental Review Safety Review Practitioners Guide

The Interim Local Development and Intergovernmental Review (LDIGR) Safety Review Practitioners Guide (Caltrans, December 2020) provides guidance to Caltrans districts and lead agencies for analyzing safety impacts of projects on the state highway system (SHS). A proposed land use project or plan may affect the SHS by adding new automobile, bicycle, or pedestrian trips to state roadways; modifying access to state roadways; or affecting the safety of connections to or travel on state roadways. Caltrans is responsible for reviewing these projects and identifying opportunities for projects to contribute to safety improvements, where justified.

REGIONAL AND LOCAL

Humboldt County Association of Governments

HCAOG is a Joint Powers Agency composed of the seven incorporated cities (Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad), and the County of Humboldt. It is the designated Regional Transportation Planning Agency as well as the Service Authority for Freeway Emergencies (SAFE). The agency is largely responsible for programming state highways, local street and road improvements, public transportation resources, and the roadside call box program. HCAOG also bears responsibility for preparing and implementing the Regional Transportation Plan (RTP). The transportation planning and programming processes are accomplished by a multi-layered committee structure.

Humboldt Regional Transportation Plan: Variety in Rural Options of Mobility (VROOM) 2022-2042

The Variety in Rural Options of Mobility (VROOM) 2022-2042, coordinated by HCAOG, is tailored to address the distinctive rural mobility needs of Humboldt County[2]. The plan embodies a long-term vision to improve transportation in the region through the following:

- Climate Change Mitigation: The plan underscores initiatives aimed at reducing transportation-related emissions, in alignment with broader environmental sustainability goals. It seeks a transportation system that minimizes its carbon footprint to reduce the impacts on climate change from regional development.
- Infrastructure Resilience: It emphasizes the need for resilient transportation infrastructure that can withstand natural disasters and sea-level rise induced by climate change. By promoting the upgrade and

[2] https://www.hcaog.net/sites/default/files/vroom_2022-2042_full_report_0.pdf

maintenance of critical infrastructure, it aims to ensure the longevity and reliability of the transport network in the face of evolving climate challenges.

- Sustainable Mobility: Advocates for a sustainable, equitable, and well-connected transportation network that caters to the diverse mobility needs of the community. This includes promoting alternative modes of transportation and improving accessibility to reduce dependency on personal vehicles.
- Community Alignment: Ensures that transportation plans resonate with community values and priorities. It underscores the importance of community engagement in shaping transportation policies that are synchronized with local needs and aspirations.
- Regulatory Compliance: Stresses the importance of adherence to state and federal transportation regulations, ensuring that the transportation strategies are compliant with the prevailing legal and regulatory frameworks.

Humboldt Transit Development Plan (TDP) 2023-2027

The Transit Development Plan (TDP) 2023-2027, an initiative by HCAOG in collaboration with LSC Consultants, aims at refining the transit system in Humboldt County over a five-year period to better meet the mobility needs of the residents. Here are the core elements and primary objectives outlined in this plan[3]:

- Service Evaluation: A thorough analysis of existing transit services to identify areas of improvement and ensure that the transit system is effectively meeting the mobility needs of the community.
- Performance Metrics: Establishing clear and measurable metrics for evaluating transit performance. This involves setting benchmarks that can help in assessing the efficiency and effectiveness of transit services.
- Capital Plan Formulation: Identifying and planning for capital needs to ensure that the transit system is well-resourced and equipped to deliver reliable services. This includes budgeting for new transit vehicles, facilities, and other critical infrastructure.
- Funding Exploration: Exploring various funding opportunities to secure the necessary financial resources for transit enhancement. This includes identifying potential grants, partnerships, and other funding sources that can help in supporting the transit development goals.
- Marketing Strategies: Developing robust marketing strategies to promote and augment transit usage within the community. This includes campaigns to raise awareness about transit services and incentives to encourage more people to use public transportation.

Humboldt Regional Bicycle Plan

The 2018 Regional Bike Plan prepared by HCAOG identifies bikeway system projects that could help make bicycling throughout Humboldt County a safe, convenient, and practical means of transportation. The plan states that HCAOG will work with and support local jurisdictions and local Native American Tribes to plan, install and maintain local bikeway networks, as well as to collaborate to build a comprehensive regional bicycle network linking cities, unincorporated areas, counties, the California Coastal Trail, and the Pacific Coast Bike Route. It states that Humboldt's regional bicycle network shall have:

- Regional bikeways that link communities and connect to local bicycle networks and facilities;
- Local bikeways that link to major activity centers, public transportation, recreation, and other destinations;
- Bicycle-friendly streets, as consistent with "Complete Streets" policies, designed with best current practices, and innovative treatments where appropriate;

[3] https://www.hcaog.net/sites/default/files/compressed_p226140_humboldt_cty_tdp_-_draft_final_v2_no_appendices.pdf

- Comprehensive facilities that support bicycle travel, including, but not limited to, directional signage, bike maps, sheltered parking, and changing stations; and
- Bicycle facilities integrated to access other modes of transportation (e.g., driving, carpooling, public transit).

HCAOG encourages local jurisdictions to adopt the National Association of City Transportation Officials design guides, including the Urban Bikeway Design Guide and/or the Federal Highway Administration's Small Town and Rural Multimodal Networks as their primary guides for designing innovative bicycle facilities.

City of Ferndale

The City's 1967 Transportation Element generally describes the transportation system in Ferndale and includes a description of a hierarchy of three street types: Major Local Streets, Standard Local Streets and Minor Local Streets. The description of these facilities includes their right of way width and improvements associated with each road category; however, no policies or implementation measures use these standards to guide new development and the existing street network is not classified according to these street types.

Section 1.905 of the City's Subdivision Ordinance (Ordinance 99-04) requires each unit or lot within new subdivisions to have approved access to a public or private street. No standards are identified for the approved access except that "(s)treet layout shall be designed to provide for future access to, and not impose undue hardship upon, property adjoining the subdivision."

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to transportation and circulation resources from implementation of the Project would be significant if it would:

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
b) Conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b); for the purpose of this analysis: result in home-based VMT per resident or home-based work VMT per employee at rates that are greater than the Countywide average;
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
d) Result in inadequate emergency access.

The proposed Project involves updating the Land Use and Safety Elements of the General Plan to increase opportunities for where and what type of growth can occur in the City. For the transit, bicycle and pedestrian, and safety components of the transportation system, the analysis focuses on whether the Project would disrupt baseline facilities or services or interfere with the implementation of planned improvements. The safety evaluation considers whether the Project's proposed modifications to these facilities are consistent with Caltrans design standards. Design standards are used to provide common user expectations to drivers, bicyclists, and pedestrians to minimize the potential for collisions. Based on the evaluation criteria above, the methodology for assessing impacts under thresholds a, c and d is qualitative in nature and considers the existing regulations in place that would minimize potential impacts related to transit, roadway, bicycle, and pedestrian facilities; geometric design features; and emergency access.

Threshold b evaluates whether the Project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), which describes specific considerations for analyzing transportation impacts as amended on July 1, 2020 pursuant to SB 375, which aims to better promote statewide policies that: (a) combat climate change by reducing greenhouse gas emissions and particulates; (b) encourage infill development and a diversity of uses instead of sprawl; and (c) promote multi-modal transportation networks, providing clean, efficient access to destinations and improving public health through active transportation. Section 15064.3(b) states that vehicle miles traveled (VMT) is "generally" the most appropriate measure of transportation impacts. No particular methodology or metric is mandated by section 15064.3(b) and the methodology or metric is left to the lead agency, bearing in mind the criteria the legislature had in mind for determining the significance of transportation impacts in SB-743.

The Project's effect on VMT considers how the potential land use and policy changes of the proposed Project will influence VMT per capita rates of the City. This analysis evaluates whether the Project would result in a significant VMT impact when compared to regional averages for Humboldt County. For the purposes of this EIR, the proposed Project would result in significant impacts under CEQA if it would result in home-based VMT per resident or home-based work VMT per employee at rates that are greater than the Countywide average under baseline conditions.

The VMT threshold selected differs from recommendations contained in the state reference documents below.

- *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), California Governor's Office of Planning and Research (December 2018).
- *Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, Caltrans, May 20, 2020
- *2022 Scoping Plan for Achieving Carbon Neutrality*, California Air Resources Board, December 2022.

The state agencies that developed these documents include significant ranges of VMT performance as part of VMT thresholds. For some project types such as retail land uses or new roadway capacity expansion projects, any increase in VMT would constitute a significant VMT impact. In other cases, land use projects could generate large increases in VMT without causing a significant impact if the project was located in a certain type of area such as being within ½ mile of a high-quality transit station. The rational for the state's thresholds tends to be connected to the state's greenhouse gas (GHG) reduction goals, which is one of the objectives of SB 743 as noted above. However, limited evidence is presented in these documents with respect to why different land use and transportation projects would have disparate treatments under the various threshold recommendations. One VMT has the same environmental consequences regardless of project type or location.

The City supports goals such as GHG emissions reduction but balances them against other important objectives of the general plan. The City's general plan identifies locations for land use development and supporting transportation infrastructure based on local community values balancing various tradeoffs across economic development, environmental protection, housing affordability, and quality of life. The plan's future VMT therefore represents the amount of VMT increase that the City accepts under these tradeoff conditions.

PROJECT IMPACTS AND MITIGATION

Impact TRAN-01: Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Finding TRAN-01: The proposed project includes a number of goals, policies, and programs that support multimodal transportation and encourage the reduction of VMTs. As such, it is

considered to be consistent with existing federal, state, and local regulations pertaining to the circulation system and potential Project related impacts would be less than significant.

Federal regulations provide guidelines for road construction and safety measures along with requirements for ADA accessibility. Any future development of streets as a result of the proposed Project would adhere to these regulations. Additionally, the Land Use Element includes policies and programs that promote the development of pedestrian friendly streetscapes (Policy LU-1.2), emphasize ADA accessibility (Policy LU-1.6), and focus on right-of-way acquisition that supports pedestrian and bike mobility (Policy LU-1.9). As such, the proposed Project would be consistent with Federal policies pertaining to transportation.

State regulations, including the Complete Streets Act, focus on planning for multimodal transportation and reduction in VMTs. As stated above, the Project includes a range of policies and programs that encourage walking and biking, and a focus on infill over expansion in order to help reduce VMTs. As such, the proposed project is considered to be consistent with current state policies addressing the circulation system.

The regional transportation plan for Humboldt County, VROOM, encourages the development of a transportation with a variety of options that reduce the carbon footprint. The policies and programs included as part of the proposed project align with VROOM in that they encourage the development of alternative modes of transportation and focus on infill development which inherently reduces VMTs and promotes walkability of cities.

The Land Use and Safety Element policies build on prior regional planning efforts, including the Humboldt Regional Transportation Plan, Humboldt Regional Bicycle Plan, and Humboldt Regional Pedestrian Plan. As the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, the impact would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact TRAN-02: Would the Project conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b)?

Finding TRAN-02: The proposed Project includes policies and programs that encourage infill development, promote the development of additional pedestrian and bicycle infrastructure, and allows more diverse housing development. Combined, these policies and programs encourage VMT reductions, however, would still result in a significant and unavoidable impact.

A VMT analysis was prepared for this EIR (Appendix B) that describes how the increase in Ferndale's population may reduce per-capita VMT consistent with the 2018 guidance from the Office of Planning and Research (OPR) in their Technical Advisory on Evaluating Transportation Impacts in CEQA. The City will remain relatively compact with existing development and new growth concentrated in an area of one square mile. The proposed changes to the Land Use map are shown in Figure 3-5 and described in Table 3-4 of Chapter 3. Proposed changes to the Land Use Map #'s 1, 4 – 7, 11 and 12 will all increase the residential development potential on parcels already planned and zoned for residential use, some of which are included in the residential land inventory of the 2019 Housing Element.

The VMT analysis suggests this would provide opportunities for reductions in VMT: "some people formerly commuting into Ferndale to work (due to lack of housing) may move in and reduce annual VMT through the reduced daily commuting distances." The proposed Project's policies that also may help reduce per-capita VMT through encouraging infill and mixed-use growth plus improved active transportation conditions are:

- Policy LU-1.4 – Residential Infill: This policy encourages the infilling and completion of residential neighborhoods to take full advantage of available public services including drainage facilities. Placing new development within areas already developed with existing roads, sidewalks and buildings will minimize the conversion of open space to developed uses thereby reducing the footprint of new development and keeping new residential development close to existing services and jobs.
- Policy LU-1.8 – Multi-Modal Transportation: Encourage multi-modal travel by increasing bike and pedestrian routes throughout the City enhanced with bike parking, exercise stations, and safe roadway crossings. Actively seek out public access easements and/or right-of-way acquisition for pedestrian creek crossings to better connect Ferndale Housing and potential development on APN 030-091-030 (see policy LU-1.7) to Main Street. Potential crossings may include Fern Avenue, Vanston Avenue, E Street, or an alternative location.
- Policy LU-1.9 – Right-of-Ways: Ensure street design and right-of-way acquisition will support pedestrian and bike mobility. This includes seeking acquisitions from willing landowners to develop a broader trail network within the City.
- Policy LU-1.10 – Community Spaces: Require higher-density neighborhoods and mixed-use areas to incorporate small public spaces and have sidewalks furnished with appropriate ADA pedestrian amenities providing comfortable and attractive settings for high levels of pedestrian activity.
- Policy LU-2.1 – Commercial Infill promotes infill and commercial activity in existing commercial areas in the Main Street Historic District and Milton Avenue area to provide services to residents and visitors.
- Policy LU-2.6 – Existing Commercial Areas Revitalization encourages reinvestment to upgrade and/or expand existing commercial centers along Main Street and in the Milton Avenue District. It also encourages upgrades to include facilities to accommodate bicycles and pedestrians and to reduce vehicle trips, and residential units on upper floors or in new structures.
- Policy LU-2.7 – Increase Residential Uses encourages commercial developments to include residential units on upper floors or at the rear to maintain uninterrupted commercial uses at the street level. Residential uses in new structures are required to comply with the R-3 development standards.
- Policy LU-3.1, Conservation, requires existing open space and agricultural land at the edges of and surrounding the City to be preserved to protect natural resources which will also protect water quality.
- Policy LU-4.3, Agricultural Use Preservation, encourages infill development and revitalization of existing residential and commercial uses with setbacks and other measures to preserve prime agricultural lands on the outer edges of the City.
- Policy LU-3.5, Forest Lands Preservation, proposes the preservation of forest resources by requiring timber management plans for any proposed forested lands conversion or harvesting, and to encourage sustainable forestry on those lands.

Policies of the Land Use Element promote conservation of existing agricultural lands, timberlands and open space areas. This has the effect of limiting new development in undisturbed areas which will keep new residential development close to existing services and jobs minimizing the number of vehicle miles traveled for those that live close to where they work, shop and play. From a larger geographic perspective, attracting growth to this area instead of outlying unincorporated areas of the county could reduce future VMT growth in the region.

Another way to evaluate potential project impacts on VMT is to use home-based VMT per resident and home-based work VMT per employee as defined in the table below.

Metric	Definition
Home-based VMT per resident	All home-based automobile vehicle trips are traced back to the residence of the trip-maker; non-home-based trips are excluded.
Home-based work VMT per employee	All automobile trips between home and work are counted.

For this analysis the VMT+ tool developed by Fehr & Peers using VMT estimates derived from StreetLight mobile device data was used[4]. The VMT+ estimates are derived from 2019 data. Based on an evaluation of VMT per capita rates using the VMT+ tool, Ferndale has a home-based VMT per resident of 27.8 (baseline for the County is 19.8) and home-based work VMT per employee of 12.1 (baseline for the County is 14.6).[5] This data shows that Ferndale's home-based VMT per resident is higher than the County VMT average and the City's home-based work VMT per employee is lower than the County VMT average.

VMT Metric	Humboldt County Average	Ferndale Average
Home-based VMT per resident	19.8	27.8
Home-based work VMT per employee	14.6	12.1

Source: https://storymaps.arcgis.com/stories/e9fb17d33a2c4d60a6747071be3d5b4a

The above analysis is consistent with a more recent study supporting the Regional Humboldt County Climate Action Plan that showed Ferndale's residents travelled more miles each day on average (80 miles) than residents of every other city in the County except the City of Trinidad[6].

Policies in the Land Use and Safety Updates support reductions in City-wide VMT such as: promoting infill development with a diversity of housing located close to the city center, improving multi-modal transportation corridors such as bike trails, working with the Redwood Transit to establish bus service, and installing EV charging stations. Although these actions may help Ferndale reduce overall annual VMT, for the purposes of this analysis, population and employment growth in this area would be expected to generate VMT per capita at rates similar to baseline conditions. Because Ferndale's home-based VMT per resident would continue to be greater than the Countywide average even with implementation of the proposed Land Use and Safety Element policies; the proposed project would exceed the VMT threshold, and VMT impacts would be considered potentially significant.

MITIGATION MEASURE

Mitigation Measure TRANS-01: The City shall work with HCAOG to incorporate findings and recommendations of the ongoing Multimodal and Vibrant Neighborhood Planning Project, or other similar HCAOG planning efforts, to develop and implement policies and programs to be included in the City General Plan, or other appropriate plans, and projects related to the City's transportation system to reduce automobile dependency for local trips which may include but are not limited to funding pedestrian, bicycle, or public

[4] https://www.fehrandpeers.com/project/find-my-vmt/
[5] https://storymaps.arcgis.com/stories/e9fb17d33a2c4d60a6747071be3d5b4a
[6] https://humboldtgov.org/documentcenter/view/131641

transit infrastructure projects; the acquisition of transit vehicles and other related equipment; or regional car and bike sharing services.

SIGNIFICANCE AFTER MITIGATION

Implementation of the Land Use Element policies above and Mitigation Measure TRANS-01 would lessen potential VMT impacts, however the efficacy of these policies and mitigation measure cannot be determined at this time and the impact is considered significant and unavoidable.

Impact TRAN-03: Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Finding TRAN-03: As there are no design features specified as part of the proposed Project and future projects would be required to comply with street design standards, the impact would be less than significant.

Since the proposed Project includes long-term planning documents, there are no specific physical projects with design features to be assessed. Any future projects that are implemented as a result of the proposed Project would adhere to existing designs regulations for roadways, fire code requirements, and current building codes. As such, potential impacts with respect to design hazards would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact TRAN-04: Would the Project result in inadequate emergency access?

Finding TRAN-04: While the Land Use Element Update may facilitate additional growth within the City, both the Land Use and Safety Element Update include policies aimed at increasing safety and addressing provisions related to emergency access. As such, impacts would be less than significant.

Implementation of the Land Use Element Update may result in increased development and potentially facilitate population growth, which would increase the number of users on the City's transportation network. The proposed Project does not propose transportation network modifications directly, but they could occur in response to subsequent individual land use projects. As growth occurs and new land use projects advance, modifications to the local and state transportation networks may be required. Any modifications would be carried out consistent with the applicable Caltrans and City of Ferndale Municipal Code and design standards. These standards are intended to minimize conflicts and collisions and provide users with common expectations for movement on the network. Additionally, the Land Use and Safety Element Updates include policies to help increase safety throughout the City including Policy LU-1.7 – Planned Development, and Safety Element Policy 6.8 for providing two access routes. Therefore, this impact is less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

4.19 TRIBAL CULTURAL RESOURCES

Tribal cultural resources include resources that are of specific concern to California Native American tribes, with knowledge of such resources limited to tribal people. Refer to Section 4.6 (Cultural Resources) for a discussion of prehistoric or historic archaeological sites, structures, or objects.

The Native American Heritage Commission responded to the Notice of Preparation with a letter recommending "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." The letter also included a list of AB 52 CEQA requirements, provisions of SB 18, and recommendations for Cultural Resources Assessments.

ENVIRONMENTAL SETTING

The Project lies within an area traditionally occupied by the Wiyot Tribe. A full discussion of the archaeological setting of the region is presented in Section 4.6, Cultural Resources.

Local Historical Context

The Project site is located within the southern portion of the Pacific Northwest Coast which has a distinctive ecological and indigenous cultural identity. Upon Euro-American contact, the region was densely populated and one of the most culturally diverse in California (Tushingham, 2020).

Since time immemorial before the arrival of European-American settlers in the 1850's, Ferndale and the Humboldt Bay region were the home of the Wiyot. An Algonquian-speaking people, the Wiyot resided in settlements along the lower Mad River and Eel Rivers as well as other local streams, and along Humboldt Bay and on the hills and ridges or lands in between. Their way of life was shaped by the surroundings of forested hills, streams and rivers, the Pacific Coast, and protected marshes and sloughs of Humboldt Bay, which provided for generations of subsistence and cultural needs. The Wiyot people have three distinct cultural subdivisions according to location: Batawat in the lower Mad River, Wiki in Humboldt Bay, and Wiyot in the lower Eel River (Nomland & Kroeber, 1936).

Traditional Native American culture was disrupted by Euro-American settlement and U.S. government policy. This produced significant depopulation and relocation of Native Californians from most of the lands they occupied, and these actions, combined with cultural intolerance, have led to the displacement of the Wiyot community and their inability to engage in many traditional cultural practices; however, affected Native American populations have not disappeared; rather, they have adapted to these new pressures. Today, the Wiyot people are federally recognized in the Wiyot Tribe Reservation, the Bear River Band of the Rohnerville Rancheria, and the Blue Lake Rancheria. These tribes are actively involved in various tribal economic projects and in the revitalization of cultural traditions such as language, basket weaving, ceremonies, and reclaiming ancestral lands.

REGULATORY SETTING

FEDERAL

National Historic Preservation Act (NHPA)

NHPA USC Title 16, Chapter 470 established the National Register of Historic Places (NRHP) and the National Historic Landmark Program (NHLP), delineated the duties of State Historic Preservation Officers, established programs and regulations to assist Indian tribes, designated matching grants to states and grants to the National Trust for carrying out the provisions of the NHPA, and established a national Historic Preservation Fund.

The Native American Graves Protection and Repatriation Act (NAGPRA)

USC Title 25, Chapter 32; implemented through CFR Title 43, Part 10 "requires Federal agencies and museums (institutions that receive Federal funds) to provide information about Native American cultural items to parties with standing and, upon presentation of a valid request, dispose of or repatriate these objects to them." The National Park Service operates National NAGPRA and the National Center for Cultural Resources; the Bureau of the Interior oversees NRHP, NHLP, and most other Federal cultural resources preservation programs.

STATE

Codes Governing Human Remains

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. The disposition of human remains is governed by Health and Safety Code Section 7050.5 and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

Senate Bill 18

Enacted on March 1, 2005, Senate Bill 18 (SB 18) (California Government Code Sections 65352.3 and 65352.4) requires cities and counties to notify and consult with California Native American tribal groups and individuals regarding proposed local land use planning decisions for the purpose of protecting traditional tribal cultural places (sacred sites), prior to adopting or amending a General Plan or designating land as open space. Tribal groups or individuals have 90 days to request consultation following the initial contact. The tribal organizations eligible to consult have traditional lands in a local government's jurisdiction, and are identified, upon request, by the Native American Heritage Commission (NAHC). As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, "tribal cultural resources." Assembly Bill 52 establishes 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" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and meets either of the following criteria:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

> In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the project if the tribe has requested notice of projects proposed within the jurisdiction of the lead agency.

If a lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, AB 52 requires the implementation of mitigation measures identified in the consultation process required under PRC Section 21080.3.2. If consultation fails to identify specific mitigation, PRC Section 21084.3(b) lists the following measures that may be considered, where feasible, to avoid or minimize the impacts:

- Avoidance and preservation of the resources in place, including, but not limited to: planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- 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:
    - Protecting the cultural character and integrity of the resource.
    - Protecting the traditional use of the resource.
    - Protecting the confidentiality of the resource.
    - 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.
    - Protecting the resource.

Regional and Local

Tribal Historic Preservation Officers (THPOs) review public and private development within traditional ancestral territory, advising and assisting in identification and mitigation of significant resources. The Wiyot Tribe and Bear River Band of the Rohnerville Rancheria THPOs were provided project notification and AB 52/ SB 18 consultation notification letters.

Impact Analysis

Significance Thresholds and Methodology

According to Appendix G of the CEQA Guidelines, impacts related to tribal cultural resources from implementation of the Project would be significant if it would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

The presence and significance of a potential tribal cultural resource is determined through consultation between lead agencies and local California Native Americans. Impacts to tribal cultural resources are highly dependent on the nature of the resource but, in general, could occur if there is destruction or alteration of the resource and its surroundings, access restrictions to the resource, or other disturbances.

For the combined Land Use Element and Safety Element, the Native American Heritage Commission (NAHC) were notified and consulted. The NAHC responded on February 8, 2023, with recommendations for conducting cultural resources assessments. On February 3, 2023, a Notification of Consultation Opportunity for Tribal consultation was sent to the Wiyot Tribe and Bear River Band of Rohnerville Rancheria. The Bear River Band of Rohnerville responded February 6, 2023, and THPO at that time (Melanie McCavour) requested consultation once a draft and map of opportunity zones/density zone changes, etc. was available for review. No response was received from the Wiyot Tribe THPO at that time. As requested, additional information was emailed to the Bear River Band THPO on March 28, 2023, including the draft Land Use Element document and Land Use Map alternatives. City representatives offered to schedule a meeting to review and discuss the materials provided virtually or in-person. Information was also provided about the upcoming City Planning Commission and public meetings for the Project. No email response was received, and a follow-up phone call was made on April 11, 2023. No additional response has been received as of the release of the Draft EIR.

PROJECT IMPACTS AND MITIGATION

Impact TCR-01: Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Finding TCR-01: Development resulting from adoption and implementation of the Project would be encouraged in already disturbed areas and are subject to local and state regulations that mitigate and reduce potential impacts to tribal cultural resources. As such, development facilitated by the Project would have a less than significant impact on tribal cultural resources.

There are no known tribal cultural resources in the City or immediate vicinity. Prior Consultations and citywide record searches of the Native American Heritage Commission Sacred Lands File were negative[1]. The Wiyot Tribe and Bear River Band THPOs were provided notification of the project as described above under Methodology. This Consultation did not result in identification of potential tribal cultural resources in Ferndale; the City will continue to provide local area THPOs project specific consultation per existing policies and regulations.

Applicable proposed goals and policies are as follows:

[1] Native American Heritage Commission Letter Re: Citywide Sewer Replacement Project. April 22, 2021.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-3	• Policy LU-3.4 – Francis Creek Corridor • Policy LU-3.5 – Forest Lands Preservation • Policy LU-3.7 – Regional Coordination
Land Use Element	Goal LU-4	• Policy LU-4.1 – Russ Park Stewardship • Policy LU-4.2 – Francis Creek Riparian Habitat Enhancement and Erosion Control
Land Use Element	Implementation Program	• LU-IP7: Open Space Action Program

Proposed policies 3.4, 3.5, 4.1, and 4.2 in the Land Use Element encourage the stewardship and habitat enhancement of several cultural resources important to the Wiyot Tribe, namely Francis Creek which is named Topochochwil to the Wiyot. Stewardship of natural resources, or shawir darrudaluduk in the Wiyot language, is an inherent part of the Wiyot Tribal heritage and culture (Canter, n.d.). There is a low likelihood that encouraging management and enhancement of these resources would adversely impact a previously undiscovered tribal cultural resource, however any new discoveries would be subject to local and regional regulations regarding tribal resources. With implementation of these measures, potential impacts related to tribal cultural resources would be less than significant.

The Land Use Element furthermore seeks to encourage housing infill projects in already disturbed areas within the City of Ferndale. Any construction projects that take place to create new housing from the Land Use Element will be subject to project specific permitting and regulatory compliance. Projects will likely occur in already disturbed areas but there does exist the possibility of unearthing unknown artifacts of cultural significance to local tribes during construction activities. In such an event, the Project will be subject to local and regional regulations regarding inadvertent discovery of cultural resources. With implementation of these measures, potential impacts related to tribal cultural resources would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Canter, A. (n.d.). *Shawir Darrudaluduk (Natural Resources)* . Retrieved from Wiyot Tribe: https://www.wiyot.us/101/Natural-Resources

Chronological and Cultural Units. (2020). Retrieved from Society for California Archaeology: https://scahome.org/public-resources/glossary-of-terms/chronological-and-cultural-units/#post

Nomland, G. A., & Kroeber, A. L. (1936). Wiyot Towns. *University of California Publications in American Archaelogy*.

Tushingham, S. (2020). The Ordered Anarchy Frontier: Storage, Sedentism, and the Evolution of Plank House Villages on the Southern Pacific Northwest Coast. In *Cowboy Ecologist: Essays in Honor of Robert L. Bettinger.*

4.20 Utilities and Service Systems

This section presents an analysis of utilities and service systems related to the City of Ferndale's General Plan Land Use and Safety Element Updates. This section provides a background discussion of utilities and service system setting including water supply, wastewater and sewer, stormwater facilities, solid waste systems, electricity, natural gas, and telecommunication facilities and analyzes potential impacts due to Project implementation. To provide the basis for this evaluation, the Setting section describes the utilities and service systems provided by and used within the City's service area. The Regulatory Framework section describes the regulatory background that applies to the Project. The Impact Analysis section establishes the thresholds of significance, evaluates potential impacts to utilities and service systems, and identifies the significance of impacts.

Environmental Setting

Water Supply

Water service for the City of Ferndale is provided by Del Oro Water Company (DOWC), which is a class B water utility under the jurisdiction of the California Public Utilities Commission (CPUC). Del Oro currently operates 20 water districts throughout California. The Del Oro Water Company, Ferndale District (DOWCFD) receives its water supply from High Line Springs, Low Line Springs, and Van Ness Well which are groundwater sources (Del Oro Water Company, 2022). Combined, the water supply sources have a maximum production capacity of 362,000 gallons per day (K.M. Clark, personal communication, January 8th, 2024). The Del Oro water system has springs fed by Francis Creek with a treatment facility and a large concrete reservoir located above the town, with backup wells and hydrants interspersed throughout its service area (Humboldt Local Agency Formation Commission, 2018).

The State Water Resources Control Board – Division of Drinking Water (SWRCB-DDW) and federal regulations by the Environmental Protection Agency (EPA) mandate that the DOWC test drinking water quality regularly. The 2022 monitoring results indicated compliance with the levels of contaminants present in the sampling results. All of the tested contaminants fell below the primary maximum contaminant levels (MCLs). Secondary MCLs are not enforced by the EPA and are determined and regulated in order to preserve the taste, color, odor, and other aesthetic considerations of drinking water. Two constituents, color and turbidity, were above the secondary MCLs but were not considered to endanger human health (Del Oro Water Company, 2022).

According to the National Integrated Drought Information System (NIDIS), a national early drought warning program administered by the National Oceanic and Atmospheric Administration (NOAA), the City does not have any current or projected drought conditions in the next five years. The program utilizes a Multi-Indicator Drought Index (MIDI) for short-term timeframes, up to 90 days, and long-term timeframes, up to five years, to project future conditions and associated drought impacts. Per NIDIS, areas approximately 30 minutes north (Eureka) and south (Capetown) are expected to experience abnormally dry conditions in long-term projections.

While the City does not have current or projected drought conditions, it could be impacted by regional droughts. Should the City experience drought conditions, DOWC has Schedule 14.1 in place which outlines the company's water shortage contingency plan with staged mandatory reductions and drought surcharges (Del Oro Water Company, n.d.). The water shortage response actions are described for six stages of drought. DOWC also follows its Rule 14.1 which describes non-essential, wasteful potable water usage and establishes restrictions on potable water usage. As of January 31, 2023, DOWC has not had to impose water restrictions or limitations on the Ferndale District. DOWC anticipates only requiring the imposition of water restrictions in Ferndale should drought conditions occur, or the water facility experiences severe operating issues (K.M. Clark, personal communication, January 8th, 2024).

WASTEWATER AND SEWER

The City's wastewater treatment plant (WWTP) was upgraded in 2011 and was designated by the North Coast Regional Water Quality Control Board (NCRWQCB) as the first tertiary wastewater treatment system in Humboldt County and meets strict 1:1 dilution ratio requirements (Manhard Consulting, 2014). The WWTP consists of headworks with a comminutor and bar screen; extended aeration and clarification (Aero-mod) treatment system; disc filtration; belt filter press for sludge handling; and ultraviolet (UV) light disinfection capabilities (North Coast Regional Water Quality Control Board, 2018). The WWTP employs a Chief Plant Operator, a Sewer Operator II, and an Operator in Training to assist with maintenance and operation. The WWTP is subject to National Pollutant Discharge Elimination System (NPDES) Order R1-2018-0046.

The WWTP is licensed to treat up to 0.95 million gallons per day (mgd) and is designed to handle an average dry weather flow of 0.55 mgd (North Coast Regional Water Quality Control Board, 2018). During rain events when the flow exceeds the design capacity, up to 5.0 mgd is sent to an equalization basin for later treatment. The equalization basin is a retention pond used for influent storage during wet weather storm events or during emergencies. This allows the facility to manage flow up to 6.0 mgd.

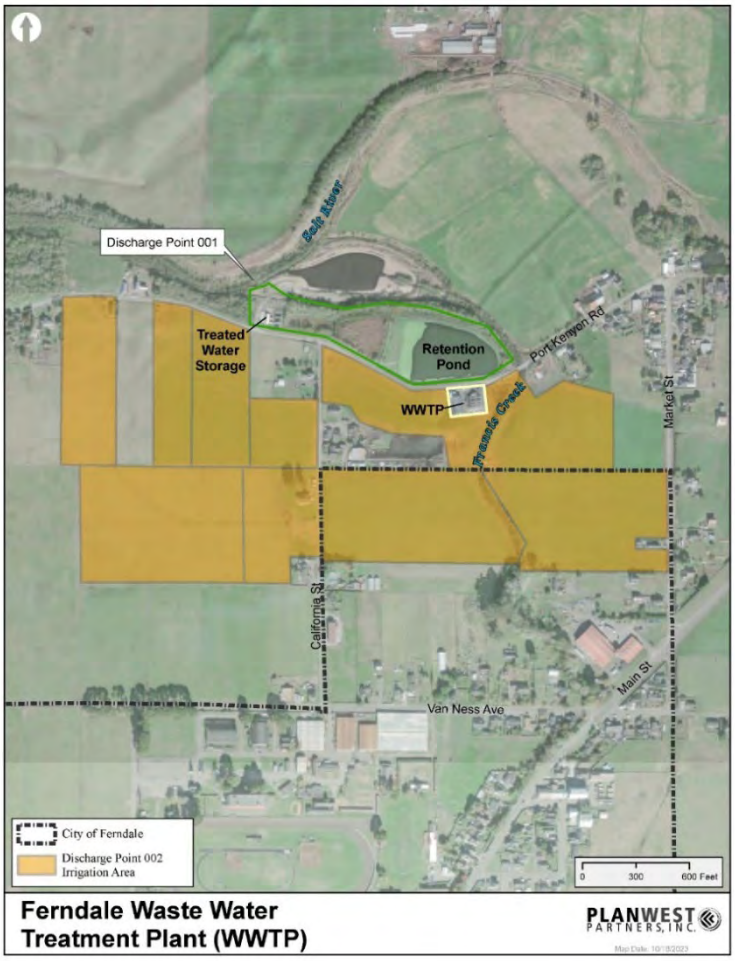
Approximately 638 residential connections and 33 commercial connections are currently served by the WWTP (J. Parrish, City Manager, personal communication, January 8th, 2024). Additionally, septage from the local area (between 400,000 and 550,000 gallons of septage annually) and sludge from the Scotia Community Services District are treated at this facility. These materials are stored in the WWTP's retention pond prior to beginning the sludge treatment process described below.

For treatment, the sewage gravity flows from the municipal collection system to the wet well at the front of the WWTP. Flows up to 1.0 mgd are pumped to the bar screens for primary treatment by primary, secondary, and backup pumps; any additional flow above 1.0 mgd is pumped to the retention pond via three pond pumps with a combined capacity of 5.0 mgd (Lost Coast Engineering, 2021). From the bar screens, sewage is then treated by the Aero-mod SEQUOXTM treatment system for activated sludge treatment. By the end of this process, the wastewater flows are separate from the solids.

Solids are supplemented with a polymer to aid in sludge thickening prior to traveling to the Tritan™ belt filter press. Sludge is thickened through a rotary pre-thickener, gravity dried via a series of baffles, and pressed. The final sludge has a solids concentration between 15 and 20 percent and is stored in a trash receptacle for future transport offsite to the Dry Creek Landfill for disposal. Sludge is transported once per year and approximately 36 dry tons of sludge is produced annually (Lost Coast Engineering, 2021).

The facility is authorized to discharge disinfected, tertiary-treated municipal wastewater from October 1 through May 14 from Discharge Point 001, located at 40°35'40" N latitude and 124°15'44" W longitude, and enters a natural drainage channel that is a tributary to the Salt River (J. Parrish, City Manager, personal communication, January 8th, 2024). The location of Discharge Point 001 in relation to the WWTP and equalizing storage pond is shown below in Figure 4.20-1. In 2012, the Humboldt County Resource Conservation District (HRCD) implemented the Salt River Ecosystem Restoration Project to restore the Salt River Watershed. Among other actions, the project modified the alignment of Francis Creek upstream of Discharge Point 001 to divert Francis Creek flows through either a constructed sediment management area or a constructed diversion channel. In the winter months, the sediment management area serves as the diversion for Francis Creek. In the summer months, Francis Creek flows through the constructed diversion channel.

Figure 4.20-1: Ferndale WWTP Features and Discharge Points



Additionally, the facility discharges disinfected, secondary-treated municipal wastewater from May 15 to September 31 from Discharge Point 002. Discharge Point 002 acts as a recycled water system for irrigation uses on pasture areas adjacent to the Facility that are approximately 78.5 acres and privately owned. The location of the areas irrigated by Discharge Point 002 in relation to the WWTP, associated facilities, and water sources is also shown in Figure 4.20-1. Waste discharge during the period from May 15 to September 31 is prohibited to the Lower Eel River and its tributaries.

The facility's retention pond also serves as a wet-weather flow equalization basin for elevated inflows from storm events that exceed treatment capacity. When flow exceeds treatment capacity, up to 5.0 mgd is sent to the retention pond where it is stored until daily influent flows return to below 1.0 mgd (Lost Coast Engineering, 2021). This allows for the facility to manage up to 6.0 mgd. Once this occurs, flows in the pond travel to the headworks and undergo the standard wastewater treatment process. The retention pond has a design capacity of 13.8 mgd, but only 5.0 mgd is available for inflow storage on a regular basis due to the water level in the pond never being completely drawn down (Northpoint Consulting Group Inc, 2020). Additionally, solids accumulate in the retention pond. When the WWTP was upgraded, the solids in the pond were not dredged. Other solids that accumulate in the pond result from locally sourced septic sludge, the annual die-off of duckweed and algae, and the influent diverted to the pond. This results in decreased storage capacity (Lost Coast Engineering, 2021).

A substantial amount of inflow and infiltration (I&I) affects the sewer collection system in Ferndale. It is caused by leaking pipes and other collection facilities that allow stormwater to enter the sewage treatment system. The City received a grant under the Clean Water State Revolving Fund in 2018 to investigate I&I issues and determine potential solutions. The grant also allowed the City to conduct an intake study within the equalization basin and a UV disinfection study to determine necessary modifications in these areas. In 2021, the City's Public Works Department determined which areas of the system contribute the largest I&I levels and identified a series of sewer line replacements that would decrease I&I and increase efficiency. The City completed a pipe replacement project along California street that resulted in a 3.0 gallon per minute (gpm) reduction in I&I flows in this area (Gregson, 2023). The City is working towards completing additional I&I reduction projects to improve operations.

Sewer Ordinance 03-05 mandates the testing and inspection of building and lateral sewers in the City in order to repair and rehabilitate portions of the main sewer. The City developed Sewer Testing Procedures in accordance

with Ordinance 03-05 to delineate how the test procedures for excessive infiltration testing shall be performed. Prior to any sale of property with a City sewer hookup, the sewer laterals must be inspected by the Public Works Department.

STORMWATER FACILITIES

The Public Works Department maintains and operates the street and storm drain systems, consisting of pipes, channels, manholes, drainage inlets, and drainage swales. The City also has a Drainage Committee which has oversight over drainage issues. In the City, drainage easements are required to be maintained and may be the property owner's responsibility. Funding for stormwater management primarily comes from Property Assessments, Development Fees, and grants. The City receives annual funding from the established Property Assessment which consists of a $25 annual drainage fee per parcel (City of Ferndale, 2022). There is also a Storm Drainage Fee Ordinance which generates revenue from new subdivision and building permits. More information can be found in the relevant section of the Regulatory Setting.

The City of Ferndale has historically had problems with stormwater and drainage. The area is subject to chronic floods as a result of storm runoff and heavy rains from storm events. Sedimentation issues are prevalent in the area as well, with increased silt preventing local water bodies from carrying peak storm runoff. Thus, stormwater runoff management is incredibly important to the area. Stormwater drainage systems within the City are split into two subareas: one east of, and one west of, Francis Creek. The East Side drainage system conveys runoff to the East Side Channel with street gutters, storm sewers, culverts, and drainage channels. The West Side drainage system consists of street gutters, culverts, and drainage channels.

The 2022 Drainage Master Plan Update (DMPU) outlines the City of Ferndale's stormwater drainage status and changes to the stormwater system since the last master plan was published in 2004. Additionally, the Master Plan addresses current and expected drainage issues, recommends improvement projects and changes to the drainage ordinance, and details the drainage fee rate structure. The 2022 DMPU only analyzes the drainage infrastructure within City limits and is actively seeking out grants to fund the analysis of drainage infrastructure outside of the City. Meetings with the public were coupled with site visits throughout the City to identify current drainage problem areas and potential improvement projects to remedy the associated drainage issues. The Drainage Master Plan includes a list of recommended improvement projects to improve the drainage problem areas and contains seven projects the City should implement as drainage funds become available.

SOLID WASTE SYSTEMS

The City contracts with Recology Eel River, formerly Eel River Resource Recovery, for its solid waste management services. Regular weekly garbage pick-up for residents is currently every Friday. Residents can sign-up to receive curbside recycling and green waste service every other week with Recology Eel River. All waste collected from Ferndale by Recology Eel River is brought to the transfer station located at 965 Riverwalk Drive, Fortuna, CA 95540. The transfer station is a medium volume transfer/processing facility. Green waste materials collected are transported to a permitted composting or chipping and grinding operation. Another recycling option for City residents is utilizing public recycling dumpsters located in the City parking lot behind Portuguese Hall (City of Ferndale, n.d.). These recycling dumpsters are collected on a weekly basis and have a 1,000-pound capacity (K. Hall, Ferndale City Clerk, personal communication, February 22nd, 2024).

The public can dispose of standard household recycling, CRV items, and non-conventional recycling such as e-waste, hazardous materials, and appliances themselves at the Fortuna Transfer Station. Some items may be accepted for a fee to offset the costs of recycling the item. Additionally, the transfer station offers shredding services for confidential or sensitive materials. This service is offered for a fee. Eel River Transportation and Salvage, located across the street from the transfer station, allows for vehicles to be recycled no matter the size. The company handles the DMV paperwork and may pay for the unwanted vehicle, depending on the market at the time of drop-off or pick-up. Fees may apply for vehicles without titles or if the company picks up the vehicle.

City residents may also utilize the Humboldt Waste Management Authority (HWMA) transfer station in Eureka. Other items accepted include old tires, large appliances, and e-waste for a fee. The Household Hazardous Waste Collection Facility is also located at the transfer station and accepts most household hazardous waste, which includes fluorescent light bulbs, paint containers, cleaning product containers, motor oil, and other items. Green waste is accepted at the transfer station for a fee; the cost of green waste disposal at the transfer station is roughly half of the cost of green waste disposal at the landfill due to the availability of a local composting facility and biomass power plant (City of Eureka, n.d.). Accepted materials include grass, shrubs, branches, unpainted wood, Christmas trees, and other items.

The City is actively working with its partners across the Humboldt County region towards full compliance with SB 1383 to provide universal organics collection and recycling. Garbage, recycling, and yard waste is collected curbside weekly by Recology Eel River as described above. There are no landfill or recycling centers in the study area. Active permitted in-County transfer stations include the Humboldt Waste Management Authority facilities in Eureka or Samoa, California and the Recology Eel River Transfer Station in Fortuna, California. There are no permitted active landfills in the County.

Electricity

Pacific Gas & Electric Company (PG&E) provides electricity services to the City. PG&E is responsible for the transmission and delivery of energy primarily throughout northern and central California (Pacific Gas & Electric Company, n.d.).

The City is a member of Redwood Coast Energy Authority (RCEA), a joint powers authority (JPA) founded in 2003, whose members include the seven incorporated cities, the Blue Lake Rancheria and the Yurok Tribe, the County, and the Humboldt Bay Municipal Water District (Redwood Coast Energy Authority, n.d.). Ferndale joined the JPA in 2018. RCEA administers Humboldt County's Community Choice Aggregation (CCA) program, which offers local control over the sources of energy on Humboldt County's electricity grid (including an option to purchase 100 percent renewable energy) as well as lower energy prices to Humboldt County residents and businesses. New energy customers are automatically opted in to the CCA program and must choose to opt out. RCEA is responsible for the purchasing of electricity for opted-in customers while PG&E is responsible for the delivery of energy (transmission) and maintenance of the electricity grid infrastructure. As of January 30, 2023, 89 percent of Ferndale energy customers are participants in the RCEA CCA system (J. Sloan, RCEA Power Resources Specialist, personal communication, January 10th, 2024). The remaining 11 percent of Ferndale customers either bundle their electricity procurement and transmission services with PG&E or engage in Direct Access (DA). See Section 4.7 (Energy) for more detail on energy resources in the City and impact analysis of energy resources from project implementation.

Natural Gas

The City of Ferndale does not have natural gas service and has no plans to extend this in the future.

TELECOMMUNICATION FACILITIES

Satellite internet options available to Ferndale residents include Viasat, Starlink, and HughesNet. Fiber internet options in the area include Optimum, Frontier Communications, AT&T, Verizon, US Cellular, and T-Mobile. According to the Federal Communications Commission 4G LTE Mobile Coverage map, AT&T, Verizon, and T-Mobile provide coverage through a majority of the planning area, with US Cellular's coverage fragmented throughout the area. All of the providers, with the exception of Starlink, also provide phone service. Starlink is anticipated to begin offering phone service in late 2024.

In the near future, ground-based broadband services are expected to be deployed to the City. On March 15, 2024 the California Coastal Commission approved a coastal development permit for CalTrans and California Department of Technology to build 156 miles of broadband infrastructure for the North Coast, including service to Ferndale (Alexander, 2024).

REGULATORY SETTING

FEDERAL

United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) aims to protect human health and the environment by developing and enforcing regulations, providing funding through grants, identifying environmental problems, educating the country on environmental issues, and publishing relevant information for public access. The EPA's mission of protecting human health and the environment is contained within Title 40: Protection of Environment of the U.S. Code of Federal Regulations (CFR).

The EPA inspects Publicly Owned Treatment Works (POTWs) to ensure stormwater discharges are managed and municipal wastewater overflows are prevented. Additionally, the EPA inspects POTWs to avoid mishandling of biosolids. Once sewage sludge is treated, it becomes biosolids which have the potential to be mishandled and present a pollution risk. The Ferndale Wastewater Treatment Plant (WWTP) is a POTW that is subject to these inspections.

ENERGY STAR Program

The EPA administers this voluntary labeling program where products and services that meet energy efficiency specifications can choose to display the ENERGY STAR logo. The program aims to inform consumers' and businesses' buying decisions and delineate which items could save them money and energy. Thousands of manufacturers partner with the EPA to make ENERGY STAR labeled products (ENERGY STAR, n.d.). Through the ENERGY STAR program, the EPA also provides guidance on energy efficiency improvements for existing homes, partners with developers who construct certified ENERGY STAR homes, assists building owners and managers with managing their energy use, and provides energy management resources for U.S. manufacturers.

Safe Drinking Water Act

The federal Safe Drinking Water Act regulates drinking water quality nationwide and gives the EPA the authority to set drinking water standards, such as the National Primary Drinking Water regulations, which protect drinking water by limiting the levels of specific contaminants that can adversely affect public health. All public water systems that provide service to 25 or more individuals must meet these standards. Water purveyors must monitor for contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) is exceeded. MCLs are the maximum permissible levels of a contaminant in water that is delivered to any user of a public water system. Contaminants include organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer, radionuclides (e.g., uranium and radon), and microbial contaminants (e.g., coliform and E. coli). The MCL list typically changes every three years as the EPA adds new contaminants or revises the MCLs. The California

Department of Public Health's Division of Drinking Water and Environmental Management is responsible for the implementation of the Safe Drinking Water Act in California.

Clean Water Act

Reorganized and expanded in 1972, the Clean Water Act (CWA) provides the structure for pollutant discharge regulatory standards and practices. Under the CWA, quality standards for surface waters are set and pollutant discharges into "waters of the United States" are regulated (33 U.S.C. §1251 et seq., 1972). It is unlawful under the CWA to discharge a pollutant from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. As defined in the Act, point sources are "any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship, or factory smokestack" (33 U.S.C. §1362(14), 1972). To monitor and ensure CWA compliance, federal, state, and tribal regulatory partners work closely with the EPA.

Certain industrial facilities, construction sites, and municipal separate storm sewer systems (MS4) are required to obtain an NPDES permit, develop a Stormwater Pollution Prevention Plan (SWPPP), or Stormwater Management Plan (SWMP) to cover for stormwater discharges. The EPA inspects these sites to ensure compliance with the stormwater regulations set forth in the CWA.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) program was initially established to regulate the quality of effluent discharge from wastewater treatment plants. The NPDES permit is required to discharge any pollutant from a point source into navigable waters. Through the NPDES Waste Discharge Requirements, the North Coast Regional Water Quality Control Board (NCRWCQB) sets limits on the levels of pollutants that may be discharged into navigable waters of the United States, which include the waters draining from Francis Creek into the Salt River. The limits are designed to meet the water quality objectives established in the Basin Plan. The State Water Board and regional water boards are tasked with implementing this federal program; more information can be found in the state regulatory setting section.

Energy Independence and Security Act of 2007

In 2007, the Energy Independence and Security Act (EISA) was signed into law with the goal of transitioning the country toward greater energy independence and efficiency. The main provisions of the Act are the Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and the appliance/lighting efficiency standards. Under EISA, inefficient lightbulbs began to be phased out in favor of more efficient lighting options and provisions were included to improve the energy efficiency of appliances.

Telecommunications Act of 1996

The Telecommunications Act of 1996 was passed by the Federal Communications Commission (FCC) to create fair rules for competition between communications businesses, allowing any communications business to compete in any market against any other business. This Act overhauled regulations of the telecommunications industry and was intended to foster "intramodal" competition between companies that used the same underlying technology for their services (Congressional Research Service, 2005-2007). The overhaul allowed for telephone service, cable programming, and other video services including broadcast services and services provided to schools to be affected.

STATE

California Energy Commission

The California Energy Commission (CEC) is California's primary energy policy and planning agency. The CEC aims to reduce energy costs and environmental impacts of energy use. Additionally, the CEC works toward safeguarding a resilient and reliable energy supply for the State.

SB350 CLEAN ENERGY AND POLLUTION REDUCTION ACT

SB350 increases the State's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030 (SB 350, 2015). Under the legislation, the State is required to double statewide energy efficiency savings in electricity and natural gas end uses by the year 2030. The CEC is working with the CPUC, the California Air Resources Board (CARB), and the California Independent System Operator (ISO) to implement SB350. The CEC is also responsible for coordination with the affected utilities and electrical corporations that are subject to the legislation. Large utilities must develop and submit integrated resource plans (IRPs) that outline how utilities will reduce GHG emissions and increase clean energy resource usage while meeting their customers' energy needs. Utilities are also authorized to undertake transportation electrification. The CPUC, CARB, and CEC are supporting these transportation electrification efforts by directing electrical corporations to apply for programs and investments to accelerate the electrification rate.

AB802 ENERGY EFFICIENCY

AB802 authorizes the CEC to create a building energy-use benchmarking and disclosure program. The CEC's authority in data collection has expanded and aims to improve the development and evaluation of policies, programs, and the state's energy infrastructure planning efforts. Notably, the CPUC is mandated under AB802 to authorize electrical and gas corporations to incentivize their customers to increase the energy efficiency of existing buildings by reducing costs. The energy efficiency achieved is determined by assessing all estimated energy savings and usage reductions.

TITLE 24, PART 6 (ENERGY CODE), CALIFORNIA CODE OF REGULATIONS

The California Building Standards Code is published every three years with supplementing updates published in intervening years. Part 6 of the Code, the CA Energy Code, contains energy conservation standards that are applicable to all residential and non-residential buildings throughout the State of California.

PG&E, Ferndale's electric supplier, is regulated by this code and must be in compliance with the new energy-efficiency advancements and methods contained therein. PG&E provides rebates to customers to assist with purchasing a generator or battery to prepare for power outages, a smart thermostat, electric heat pump water heaters and room air conditioners, and general qualifying, energy-efficient products for multifamily property owners and managers (Pacific Gas & Electric Company, n.d.). These rebates are intended to assist customers with reducing their energy usage and to save associated costs and time. Updates to Title 24, Part 6 have the potential to result in changes to these rebates and could affect future energy-efficiency products.

California Department of Resources Recycling and Recovery

The California Department of Resources Recycling and Recovery (CalRecycle) administers the State's recycling and waste management programs to protect the environment and climate for the health of future generations. CalRecycle works towards transitioning from a disposable to a fully circular economy through the reduction, reuse and recycling of resources, environmental education, and disaster recovery.

AB939 CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT OF 1989

CalRecycle oversees local governments as they develop and implement plans to comply with the California Integrated Waste Management Act (IWMA) of 1989. The IWMA requires all California jurisdictions to prepare and submit an Integrated Waste Management Plan (IWMP) to CalRecycle. The IWMP is to include plans for waste reduction and recycling, as well as safe disposal of non-recyclable waste. Each County is required to form a task force to coordinate the development of a Source Reduction Recycling Element (SRRE) report showing how they will divert 50 percent of their solid waste stream annually from landfill disposal. Jurisdictions may meet this goal through waste reduction, recycling, or other means. The IMWA also established the California Integrated Waste Management Board (CIWMB), which acts as a professional oversight board and approves/disapproves IWMPs.

AB1826 MANDATORY COMMERCIAL ORGANICS RECYCLING

AB1826 (Chesbro, Chapter 727, Statutes of 2014) required businesses that generate eight cubic yards or more of organic waste per week to recycle their organic waste on and after April 1, 2016 (AB1826, 2014). On January 1, 2017, the requirements for organic waste generation decreased from eight cubic yards or more to four cubic yards or more. Organic waste is defined as food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste mixed in with food waste. The bill also requires businesses that generate four cubic yards or more of commercial solid waste per week to arrange for organic waste recycling services on and after January 1, 2019. CalRecycle has decreased these solid waste generation requirements to two cubic yards as of September 2020.

Additionally, the law also requires local jurisdictions to implement organic waste recycling programs to divert organic waste generated by businesses on or after January 1, 2016. This also includes multifamily residential dwellings that consist of five or more units. Each jurisdiction is also required to report its implementation progress to CalRecycle, which determines whether the jurisdiction is in compliance.

SB1383 SHORT-LIVED CLIMATE POLLUTANT REDUCTION

SB1383 (Lara, Chapter 395, Statues of 2016) builds upon AB1826 and required Californians to reduce organic waste disposal by 50 percent by 2020, and by 75 percent by 2025. Also, by 2025, 20 percent of currently disposed edible food must be recovered for human consumption. Adopted in 2016, this law is one of the most significant California mandates to be adopted in the last three decades. SB1383 puts forth a statewide target for waste reduction rather than jurisdictional targets throughout the State, but still has implications for waste jurisdictions and local governments.

The law requires jurisdictions to provide organics collection services to residents and businesses, establish an edible food recovery program, engage the community with education and outreach on the bill, procure recyclable and recovered organic products, secure access for recycling and edible food recovery capacity, and ensure compliance with the law through enforcement. All jurisdictions were required to have programs in place by January 1, 2022, and to begin enforcing the law against non-compliant entities by January 1, 2024. CalRecycle is responsible for conducting compliance evaluations.

AB341 MANDATORY COMMERCIAL RECYCLING LAW

Adopted in 2012, AB341 (Chesbro, Chapter 476, Statutes of 2011) describes the requirements of the statewide mandatory commercial recycling program which aims to reduce greenhouse gas (GHG) emissions by diverting commercial solid waste to recycling streams. Under this law, businesses (including public entities) that generate four cubic yards or more of commercial solid waste on a weekly basis must arrange for recycling services (AB341, 2011). Multifamily residential dwellings of five units or more are also subject to this requirement. Diversion of

solid waste can be done through businesses self-hauling, subscribing to a hauler, arranging for pick-up, or subscribing to a recycling service that yields diversion results comparable to source separation. Property owners of these businesses or multifamily dwellings are allowed to require tenants to separate their recyclable materials.

Additionally, each jurisdiction in the State is required to implement a commercial solid waste recycling program. These programs should consist of education on the topic, outreach, and monitoring of businesses in a manner that is designed to divert commercial solid waste from businesses. Annual electronic reports that provide updates on the jurisdictions' progress in implementing its commercial recycling program are required. CalRecycle is responsible for reviewing these programs every two or four years and must include an annual jurisdiction site visit and review of the electronic annual report.

California Department of Water Resources

The California Department of Water Resources (DWR) manages, protects, conserves, and develops the water resources of the State to meet current and future water needs.

§§ 10005(A): CALIFORNIA WATER PLAN

California's plan for sustainably managing and developing water resources for present and future generations is outlined in the California Water Plan and updated every five years. The DWR administers this Plan. This Plan outlines the status and trends of the State's water-dependent natural resources, supplies, and demands. While the Plan does not mandate actions or make project-specific requirements, policy and lawmakers are still required to take steps to authorize the actions proposed in the plan and source appropriate funding for project deployment.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

The Sustainable Groundwater Management Act (SGMA) is made up of three legislative bills and other statewide regulations. Under the Act, local agencies are required to form groundwater sustainability agencies (GSAs) for high and medium-priority basins. The GSAs are then required to develop and implement groundwater sustainability plans (GSPs). The DWR provides regulatory oversight through the assessment of the GSPs and assists locals by developing best management practices, guidance, and planning, technical, and financial assistance with SGMA compliance.

SB610 WATER SUPPLY PLANNING

SB610, building upon the 1995 water supply legislation then known as SB901, requires public water systems with less than 5,000 connections to prepare water supply assessments on any project that would increase service connections by 10 percent or more (SB610, 2001). If there is no public water system to provide the assessment as identified by the city or county, then the DWR is required to prepare it. In this case, the State Controller is allowed to cover the costs associated with this development by the DWR.

Water supply assessments must identify any existing water supply entitlements, water rights or service contracts relevant to the water supply, and a description of the water quantity received in previous years from the public water system. Additionally, the assessments must include more information about water supply contracts, capital outlay programs, permits, and regulatory approvals than what was previously required in previous iterations of water supply assessment legislation. Public water systems must approve their water supply assessments in 90 days.

California State Water Resources Control Board

The California State Water Resources Control Board (SWRCB), created in 1967, is mandated to allocate and protect the uses of the State's water resources and drinking water for environmental protection, public health, and all beneficial uses. The SWRCB regulates the nine regional water quality control boards throughout the state.

§§ 13000: Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) authorizes the SWRCB to adopt, review, and revise policies for waters across the state as codified in the California Water Code (Water Code §§ 13000 et seq., 1969). Porter-Cologne also requires regional water boards to adopt, review, and revise basin plans and provides guidelines on necessary consideration factors pertaining to water quality objectives and implementation measures. The Porter-Cologne Act requires a program of implementation for water quality protection; this program entails the actions necessary to achieve objectives, a corresponding timeline, and monitoring plans to ensure water quality objectives and protection of beneficial uses are in compliance.

This act also defines "Waters of the state" to mean any surface water or groundwater, including saline waters, within the boundaries of the State. Waters of the state are subject to the rules and regulations as implemented by the SWRCB.

Water Action Plan

In 2014, the first edition of the California Water Action Plan (WAP) was developed. The WAP, developed by the California Natural Resources Agency, the California Environmental Protection Agency, and the California Department of Food and Agriculture, serves to engage the state in increasing sustainable water management practices. Specifically, the WAP aims to meet three objectives: have more reliable water supplies, conduct restoration of important species and habitats, and sustainably manage a water resources system with increased resiliency (California Natural Resources Agency, 2014). The WAP has acted as the foundation for the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (commonly known as Proposition 1 or the 2014 water bond), and the Brown Administration's legislative agenda. Proposition 1 was overwhelmingly approved by State voters and authorized $7.45 billion to fund ecosystem and watershed protection and restoration, water supply infrastructure, and drinking water protection projects. Part of this funding is being applied to many of the goals outlined in the WAP.

The SWRCB was tasked with implementing individual and coordinated efforts to enhance statewide flows in at least five stream systems that support critical habitat for anadromous fish in collaboration with the California Department of Fish and Wildlife (CDFW). Together, these two entities have identified five priority stream systems as a starting point for the WAP's efforts. These include Mark West Creek, tributary to the Russian River; Mill Creek, tributary to the Sacramento River; Shasta River, tributary to the Klamath River; South Fork Eel River, tributary to the Eel River; and Ventura River. The South Fork Eel River is south of Ferndale and joins the Eel River, which runs north of the City of Ferndale.

Municipal Stormwater Program

The SWRCB is responsible for implementing the NPDES program at the state level. The SWRCB issues Municipal Stormwater permits for discharges from Municipal Separate Storm Sewer Systems (MS4s). MS4s are described as "a conveyance or system of conveyance including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a State" (40 CFR § 122.26(b)(8)). The Municipal Storm Water Program manages the Phase I Permit Program, Phase II Permit Program, and the Statewide Stormwater Permit for the State of California Department of Transportation (DOT).

Phase I serves municipalities of over 100,000 people and requires the discharger to develop and implement a Storm Water Management Plan to reduce discharge to the maximum extent practicable. Phase II serves less than 100,000 people and provides permit coverage for smaller municipalities. According to the EPA, the Phase II rule is automatically extended to all small MS4s located in urban areas with a population of at least 50,000 people as mapped by the Census Bureau (United States Environmental Protection Agency, 2023). There is an exception to this, which is that the NPDES permitting authority may waive the automatic coverage extension.

The Phase II rule also covers small MS4s located outside of those urban areas on a case-by-case basis if the permitting authority designates the location as needing NPDES stormwater permit coverage in order to protect water quality. Factors that may be considered in determining if permit coverage is necessary include population density, the presence of industrialized areas, proximity to sensitive or protected water bodies, and other perceived threats to water quality. Humboldt County currently only has Permit II coverage for McKinleyville, Shelter Cove, and some unincorporated areas of Eureka. While the City of Ferndale is not currently covered by the Phase II permit program, the County anticipates expansion of their Permit II jurisdiction to several southern County communities when the permit is reissued, likely in 2025. At that time, this jurisdiction may be extended to Ferndale given the City's proximity to the Salt River, a tributary of the Eel River which is a designated Critical Coastal Area by the California Coastal Commission, but at present, it is unknown if this will occur (North Coast Regional Water Quality Control Board, 2005).

Regional and Local

North Coast Regional Water Quality Control Board

The North Coast Regional Water Quality Control Board (NCRWQCB) is responsible for protecting and enhancing water quality in the North Coast region in collaboration with the State Water Resources Control Board. Section 13200(a) of Porter-Cologne defines the North Coast Region as "all basins including Lower Klamath Lake and Lost River Basins draining into the Pacific Ocean from the California-Oregon state line southerly to the southerly boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma Counties" (Porter-Cologne Water Quality Control Act, 1969).

The NCRWQCB Order No. R1-2018-0046 and NPDES No. CA0022721 set forth waste discharge requirements (WDRs) and water recycling requirements for the City of Ferndale's WWTP. The City was required to file a Report of Waste Discharge as an application for re-issuance of WDRs and NPDES permit no later than January 15, 2023. The current Order No. R1-2018-0046 expires on December 31, 2023.

Water Quality Control Plan for the North Coast Region

As a regional water board, the NCRWQCB adopts and implements water quality control plans (basin plans). The North Coast Basin Plan outlines a program of actions to preserve and enhance water quality while also protecting regional waters' beneficial uses. The Basin Plan designates the beneficial uses of regional waters, sets quantitative and qualitative objections to maintain these beneficial uses, defines implementation actions to meet water quality objectives, and provides an overview of the NCRWQCB's monitoring activities in place. The Basin Plan is also responsible for describing how the NCRWQCB provides for public participation and the necessary framework to develop discharge regulations. The NCRWQCB's regulatory programs rely upon the Basin Plan to serve as a basis for discharge regulations, engaging in resource management activities, and compliance pertaining to water quality activities, unless otherwise directed or authorized by statute.

Water quality standards are reviewed every three years (triennial review) by the State to inform any modifications and adoptions of new standards. Any modifications to the Basin Plan, originating from regulation changes, new technologies or policies, or physical changes to the region discovered by the triennial review, are implemented

through basin plan amendments as needed. To amend a Basin Plan, the regional water board must prepare an amendment, an environmental review, and a staff report. The State Water Board then reviews and approves, or remands for changes, the amendment. The State Office of Administrative Law (OAL) reviews the amendment and upon approval, the amendment takes effect. If any adoptions of revisions of federal surface water standards take place, then the EPA must also review and approve the amendment.

MUNICIPAL STORMWATER PROGRAM

The NCRWQCB implements and enforces the Municipal Storm Water Program, in addition to the SWRCB and Humboldt County government, for the City of Ferndale. More information can be found in the Municipal Stormwater Program headings under the SWRCB and Humboldt County Government sections.

Humboldt County

HEALTH AND HUMAN SERVICES, DIVISION OF ENVIRONMENTAL HEALTH

Solid Waste Local Enforcement Agency

CalRecycle designates the Division of Environmental Health (DEH) to act as the Solid Waste Local Enforcement Agency (LEA) for Humboldt County. The seven incorporated cities of the County approved this action in 1992 via resolutions. The LEA issues, reviews, revises, and approves solid waste facility permits, comments on design plans and environmental reviews, inspects solid waste operations throughout the County, and engages in educational campaigns to inform residents of proper handling and disposal methods for solid waste.

Onsite Wastewater Treatment Systems

The Humboldt County Local Agency Management Program (LAMP) was implemented in 2018 after approval by the Humboldt County Board of Supervisors and the NCRWQCB. The LAMP permits and regulates onsite wastewater treatment systems (OWTS) and provides necessary frameworks for local regulations. Local authority for the OWTS management is provided by the Humboldt County Code (HCC) Title VI Division 1 Water and Sewage (HCC 611-1). The County has developed and adopted an *Onsite Wastewater Treatment System Regulations and Technical Manual (RTM)* in accordance with HCC 612-1, which replaces prior *Humboldt County Sewage Disposal Regulations.* The RTM delineates the siting, design, operation, and maintenance standards of OWTS in the County that have a projected flow of less than or equal to 10,000 gallons per day and receive only domestic wastewater from residential or commercial buildings or receive high-strength wastewater. If the OWTS is receiving high-strength wastewater, it cannot exceed 900 mg/L Biological Oxygen Demand (BOD) from commercial food service buildings, which are required to have a functioning and properly sized interceptor for oil/grease (Humboldt County Board of Supervisors, 2017).

PUBLIC WORKS SERVICES, DIVISION OF WATER MANAGEMENT

Municipal Stormwater Program

Humboldt County is directed by the EPA and the SWRCB to administer stormwater management programs within the County's municipal separate storm sewer system (MS4) jurisdiction. The small MS4 Permit (also known as the Phase II Permit) adopted in 2013 by the SWRCB applies to stormwater discharges from MS4s where "small" MS4s are designated based on the region's population. Currently, this permit applies to McKinleyville, unincorporated Eureka areas, and Shelter Cove in Humboldt County. An updated small MS4 permit is planned to be reissued by 2025 and the County's jurisdiction is anticipated to expand to southern Humboldt County communities, such as Ferndale, in this update.

Groundwater

Humboldt County is responsible for the coordination of the local response to the Sustainable Groundwater Management Act (SGMA). The one medium-priority basin in the County is the Eel River Valley Groundwater Basin, which includes the area of Ferndale. In 2022, the Eel River Valley Groundwater Sustainability Plan (GSP) was finalized and submitted to the DWR for public comment and review to ensure it complies with the requirements laid forth in the SGMA. This GSP presents a framework for groundwater resource management to sustainably bring economic, social, and environmental benefits to the Basin. The management framework aims to best fit the current conditions and community interests within the Eel River Valley Groundwater Basin.

City of Ferndale

DRAINAGE COMMITTEE

The Ferndale Drainage Committee, formed ad-hoc in 1989, is responsible for overseeing drainage issues in the City and often develops reports to be reviewed by City Council, supervises budget items related to drainage, and serves as a liaison for complaints, and suggestions for functions or programs offered by citizens. In 2020, the Committee was made permanent to address issues with Francis Creek drainage and adjoining watersheds that affect the storm drainage system.

DRAINAGE MASTER PLAN UPDATE

The 2022 Ferndale Drainage Master Plan Update (DMPU) builds on information provided in the 2004 update. The DMPU serves as a long-range planning tool to identify problems in the existing drainage system, provide guidance for future drainage facilities, make recommendations to reduce flood or other damages, and establish fee schedules for development. Through consultation with the Ferndale Drainage Committee and site visits, the DMPU identified drainage problem areas in the City through the usage of the updated hydrologic City model, some of which were identified in the 2004 DMPU but have yet to be resolved. The DMPU plans for drainage issues in the City that may be exacerbated or affected by future development efforts in the City. More information on the 2022 DMPU and the identified problem areas can be found in the Wastewater and Sewer section of the Environmental Setting and under Section 4.11 – Hydrology and Water Quality.

DRAINAGE ORDINANCE 94-01

The Drainage Ordinance (Ordinance 94-01), passed in 1994, establishes requirements for drainage facility improvements and drainage fees within the Ferndale Drainage Area, which is described as the area within City limits, and a portion of unincorporated area in the County, that lies within the interior boundaries of the study area and drainage boundaries (City of Ferndale, 1994). The purpose of Ordinance 94-01 is to reduce flooding within the City by conducting drainage improvements which will help pass upstream and on-site drainage while protecting properties downstream. Through the ordinance, there are numerous standards and regulations to prevent flooding and improve drainage. These include, but are not limited to, the following: a) All surface waters flowing through a parcel must be able to convey through without damaging any dwelling, improvement, or other structure in the vicinity; b) Site development must maximize percolation of precipitation into the ground and minimize surface runoff into streets or properties wherever possible; c) Storm drainage facilities constructed outside of an affected parcel must be able to convey storm runoff from the development of the drainage basin within and above subdivisions; and d) Major drain channels must have capacity for a 25-year runoff frequency and secondary and minor drainage channels must have capacity for a ten-year runoff frequency.

Additionally, this ordinance establishes drainage fees for existing and new parcels to compensate for the additional impervious area created by development or improvements made to the parcel area. The amount of the

required fees differs depending on if the parcel was created before or after the passing of Ordinance 94-01, if it involves the construction or relocation of structures, what kind of development (i.e. commercial, residential, industrial) is proposed, how much increased impervious area or additional ground coverage is occurring, the zoning of the parcel, and other factors. Ordinance 94-01 explains how a requested permit can be exempt from paying drainage fees if it aims to perform any of the following conditions:

- To replace a structure destroyed or damaged by fire, flood, wind, or Acts of God. This exception is only to the extent that the resultant structure has the same or less ground floor square footage as the original structure. If the ground floor square footage is increased, the square footage of the additional ground floor area shall be used to determine if the fee is due.
- To modify or construct a single-family residence on a parcel greater than six (6) acres in area.
- To construct any facilities on parcels greater than twenty (20) acres in area, provided less than ten (10) percent of the parcel is covered by impervious surfaces.
- To relocate an existing house within the City limits where impervious area at new location does not exceed 100 square feet. (City of Ferndale, 1994).

SEWER ORDINANCE

The City's Sewer Ordinance 03-05 is supplemented with two other components: the Sewer Fee Ordinance 04-03 and the Sewer Testing Procedures.

Sewer Ordinance 03-05

Passed in 2004, the Sewer Ordinance (Ordinance 03-05) provides regulations for the use and construction of sanitary sewer facilities in the City. The ordinance sets requirements for public sewers including that waste must be treated before discharge, waste disposal must be sanitary, what kinds of waste is prohibited to be discharged, sewage must be disposed of as provided in this ordinance and not to other facilities, and other rules. Ordinance 03-05 also includes provisions regarding the construction of sewers, lateral sewers, and connections.

Public sewer construction or connection requires a permit and fee payment prior to any development. Many other provisions on this topic are laid out in Ordinance 03-05 including compliance with local regulations, requiring properly licensed personnel, specifications for subdivisions and easements, design and construction standards, and testing requirements.

Ordinance 03-05 also sets forth regulations regarding sewer fees and charges related to connections, lateral connections, special connections, permit and inspections, bonds, condemned work, outside sewers, and more. The City maintains a separate sewer fund that goes towards reimbursement of the City for costs directly related to sewer. Monthly service sewer charges are determined by the Sewer Fee Ordinance, summarized below.

The City is responsible to repair lateral sewers and connections that contribute infiltration at a rate greater than the City' standards on City property. Sewer laterals are tested for infiltration upon sale of a property and are paid for by the property seller or buyer. Tests must conform to standard testing specifications, laid out in the Sewer Testing Procedures summarized below. A City Inspector must witness the test and sign a permit inspection card upon successful completion, which is required with title transfer proceedings.

Sewer Fee Ordinance 04-03

The Sewer Fee Ordinance 04-03 (Ordinance 04-03) establishes the sewer connection, usage fees, and annual review of Commercial Sewer Service for the City. The Commercial Sewer Service is based on annual water consumption and determining Equivalent Dwelling Units (EDUs). EDUs are a measurement unit for the amount of sewage generated from particular buildings, equal to the approximate amount of sewage generated by an average

single-family residence. Residential usage fees are equal to one EDU per month, while commercial usage fees are based on annual water consumption relating to EDUs.

Sewer Testing Procedures

The Sewer Testing Procedures (Testing Procedures), passed in 2004 in connection with Sewer Ordinance 03-05, outlines the steps necessary in the test procedure for excessive infiltration, sewer lateral, and lateral testing. The steps of Water Exfiltration Testing and Air Testing are laid out and must be performed as outlined.

Subdivision Ordinance 99-04

Passed in 1999, the Subdivision Ordinance (Ordinance 99-04) regulates and controls the division of land within the City and supplements the Subdivision Map Act of the Government Code. Specifically, the ordinance supplements the provisions laid forth in this Act concerning the design, subdivision improvement and survey data, the form and content of all maps, and the procedure to secure approval from the necessary review committees and/or commissions, individuals, and departments of the maps.

In Ordinance 99-04, Section 1.902: Improvements Required relates to utilities and service systems. Under this section, subdivisions must:

- Have storm water runoff be collected and conveyed by an approved storm drain system that protects offsite properties from runoff caused by development;
- Be served by an approved sanitary sewer system[1];
- Have streetlights installed by the applicant, directed by the City Engineer, and in accordance with City Standards;
- Be served by an approved domestic water system for each unit or lot within the subdivision[2]; and
- Be served by gas (if required), electric, telephone, and cable television facilities.

All utilities within and adjacent to the subdivision must be placed underground, except facilities exempt by the PUC or if an appeal has been made to waive undergrounding requirements and has been accepted by the City Engineer and City Council.

For subdivisions with five or more parcels, the undergrounding requirements for peripheral streets may be submitted for appeal in accordance with Section 1.502.7 of Ordinance 99-04 with attachments of estimates by the utility companies on how much it would cost to underground its facilities along the peripheral street. The developer submitting the appeal for the requirements must pay the fees by the utility companies to cover the costs of creating price estimates. In this scenario, the City Council may accept an in-lieu fee so long as it is not less than the cost of undergrounding utilities along streets in the City. These fees fund the undergrounding of future utilities throughout the City.

For subdivisions with four or less parcels, the City Engineer may modify or waive the undergrounding requirements if it's been found that the subdivision is in an area where existing utilities have not been undergrounded, if overhead utilities will have no significant visual impact, and if the in-lieu fee is paid.

Additionally, Tentative Subdivision Maps must be accompanied by a Utility Certification, which is a certification by all utilities that the proposed subdivision can be adequately served. Tentative Subdivision Maps are required, in addition to other maps and subject to other regulations, for all divisions of land when there are four or more

[1] If it differs from the public sewer system, the Planning Commission must approve the use of the alternate sanitary sewer system.

[2] If it differs from the publicly regulated community water system, then the Planning Commission must approve the use of the alternate water supply system.

parcels or five or more parcels. This requirement has conditions for exceptions laid forth in Section 1.4 of Ordinance 99-04.

Floodplain Management Ordinance 08-02

The Floodplain Management Ordinance (Ordinance 08-02) was passed in 2008 and sets forth standards for and regulations on floodplain management. Ordinance 08-02 aims to promote public welfare and minimize losses from flood conditions by establishing regulations that:

- Restrict or prohibit uses with water or erosion hazards or those that increase erosion, flood heights, or flood velocities to prevent dangers to health, safety, and property;
- Require that uses, or facilities which serve uses, vulnerable to floods be protected against flood damage at initial construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers that channel floodwaters;
- Control development such as filling, grading, and dredging in order to lower potential flood damage; and
- Regulate or prevent flood barriers from being constructed if they will unnaturally divert floodwaters or otherwise result in increasing flood hazards in other areas.

Ordinance 08-02 sets provisions for flood hazard reduction in areas of special flood hazards through the requirements of construction materials needing to be flood resistant; construction practices to minimize flood damage; residential construction elevation to be approved and certified as properly elevated by registered or licensed personnel, including a civil engineer or land surveyor, and community building inspector; and other construction standards for residences, nonresidential construction, accessory structures, and other construction. Additionally, Ordinance 08-02 sets standards for utilities, requiring all new and replacement water supply and sanitary sewage systems to either minimize or fully eliminate the infiltration of flood water into the system and the discharge of the system into flood waters. Finally, floodways have the following provisions: a) No new construction, substantial development, or other development such as fill is permitted within Zones A1-30 and AE unless it is shown that the development's cumulative effect will not increase the water surface elevation of the base flood more than one foot at any point and until a regulatory floodway is adopted and b) Encroachments within an adopted regulatory floodway including fill, new construction, substantial developments, or other developments are prohibited unless a registered civil engineer certifies that the proposed encroachment will not increase flood levels during the base flood discharge.

Other standards include standards for subdivisions, manufactured homes, recreational vehicles, and other proposed developments. Variance issuance is possible but has numerous conditions that must apply before a variance is granted. As stated in Ordinance 08-02, "It is the duty of the City Council to help protect its citizens from flooding. This need is so compelling… that variances from the flood elevation or from other requirements in the flood ordinance are quite rare" and as such, the goal of reducing and preventing flood damage can only be met if the amount of variances issued are seriously limited (City of Ferndale, 2008). Since the passing of Ordinance 08-02, the City has not issued any variances.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

In accordance with Appendix G of the CEQA Guidelines, a significant utilities impact would occur if new development facilitated by the proposed Project would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
b) Have insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years;
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments;
d) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

This analysis considers the existing capacity of utilities serving the City of Ferndale as of February 2023, estimates the potential additional demand on utilities both qualitatively and quantitively as a result of the Project, and identifies whether the existing system will be able to serve the existing demand plus the Project's projected demand for utilities and service systems.

PROJECT IMPACTS AND MITIGATION

Impact UTL-01: Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Finding UTL-01: Development facilitated by the Project would incrementally increase the demand for water, wastewater, stormwater drainage, electric power, and telecommunications facilities in the City as growth occurs. However, there is existing capacity in the utilities and services provided so there is no need for new or expanded facilities as a result of the Project. Compliance with Ferndale Land Use and Safety Element policies and programs would further minimize potential impacts on utilities and services, so impacts would be less than significant.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	Policy LU-1.4 – Residential Infill
Land Use Element	Goal LU-1	Policy LU-1.7 – Planned Development
Land Use Element	Goal LU-2	Policy LU-2.1 – Commercial Infill
Land Use Element	Goal LU-3	Policy LU-3.2 –Improve Drainage
Land Use Element	Goal LU-3	Policy LU-3.3 – Manage Flood Plains
Land Use Element	Goal LU-4	Policy LU-4.3 – Agricultural Use Preservation

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Implementation Programs	LU-IP3: Planned Development Designation
Land Use Element	Implementation Programs	LU-IP4: Drainage Infrastructure Funding
Land Use Element	Implementation Programs	LU-IP5: Drainage Master Plan Priorities
Safety Element	Goal 1	Policy 1.4
Safety Element	Goal 2	Policy 2.4, 2.5, 2.7, 2.8, 2.9
Safety Element	Goal 2	Program 2.f, 2.h, 2.l, 2.n, 2.o,
Safety Element	Goal 4	Policy 4.2, 4.3
Safety Element	Goal 4	Program 4.e, 4.f

Development facilitated by the Land Use and Safety Element Updates will require connections for water, wastewater, stormwater drainage, electric power, and telecommunications to existing infrastructure. The Ferndale Land Use Element promotes infill and higher density in areas with existing infrastructure which will decrease the need for expanded facilities. There would not be an increased demand for natural gas as this service is not provided in the City and there are no plans to extend this service in the future.

Sewer Ordinance 03-05 requires permits and fees prior to development of public sewer construction or connections in the City. This ordinance also requires properly licensed personnel to conduct the work, sets forth specifications for subdivisions and easements, design and construction standards, and testing requirements. Residents are subject to Sewer Fee Ordinance 04-03 which determines connection charges and usage fees for development. These fees are stored in a City fund specific to sewer and are used to reimburse the City for costs related to sewer maintenance and operation. Information regarding water and wastewater capacity is further discussed below under UTL-02 and UTL-03.

Development facilitated by the Project would require additional water and wastewater connections, or laterals, to existing infrastructure. However, since Policy LU-1.4, LU-2.1, and LU-4.3 encourage infill development in areas where existing water and wastewater mains are located, development would not require a substantial expansion of facilities/infrastructure. Policy LU-1.7 Planned Development would require the establishment of new water and wastewater mains within newly constructed roadways.

The Subdivision Ordinance 99-04 regulates the division of land within the City and requires subdivisions to collect and convey stormwater runoff through an approved storm drain system, install streetlights, and be served by an approved sanitary sewer system, domestic water system, electric, telephone, and cable television facilities. The approved storm drain system must protect offsite properties from runoff caused by development of the subdivision.

Water

Water service for the City of Ferndale is provided by Del Oro Water Company (DOWC), which receives its water supply from High Line Springs, Low Line Springs, and Van Ness Well which are groundwater sources (Del Oro Water Company, 2022). Combined, the water supply sources have a maximum production capacity of 362,000 gallons per day (K.M. Clark, personal communication, January 8th, 2024). The Del Oro water system has springs fed by Francis Creek with a treatment facility and a large concrete reservoir located above the town, with backup wells and hydrants interspersed throughout its service area (Humboldt Local Agency Formation Commission, 2018).

Del Oro has 793 total connections in the Ferndale District. As of January 31, 2023, DOWC provided water services to 779 active customer accounts in the District with 661 residential accounts and 118 nonresidential accounts (K.M Clark, personal communication, January 8th, 2024). Existing maximum daily demands are estimated at 239,500 gallons of water per day (gpd) with residential accounts using 191,401 gpd and nonresidential accounts using 48,099 gpd (K.M. Clark, personal communication, January 9th, 2024). This results in approximately 289.6[3] gpd per residential account and 407.6[4] gpd per nonresidential account. At present, DOWC is using approximately 66[5] percent of its maximum production capacity.

As a community water system grows in size, the peak demands do not typically grow as fast as the population assuming future users are similar to existing users. This is due to several factors including water conserving fixtures in new developments, higher density development with less outside landscape irrigation, the moderating effect of a larger user base, and other factors. However, for the purposes of this analysis, a conservative approach is used, and it is assumed that future per capita peak water demands will be the same as existing and that future water demands will be directly proportional to population growth.

The water supply must meet the needs of a projected population of up to 1,528 people in 2045, which represents an 11% growth over 2023. This growth in population will need a commensurate growth in treated water supply. Based on the current per capita water demands and the planned population increase, the 2045 demands therefore are projected to increase by up to 11%, which can be accommodated within the DOWC existing maximum production capacity. The potential growth would result in DOWC using approximately 73[6] percent of its capacity, assuming that the maximum production capacity of the DOWC water sources remained the same and that future residential water demands are similar to those at present. The DOWC will need to regularly operate and maintain their treatment system and they may have to upgrade portions of the treatment system to comply with future regulatory mandates. Such operations, maintenance, and upgrades are associated with the management of the potable water production system and would not be necessitated by the planned growth in the City.

Therefore, given the available Del Oro Water Company treatment capacity, projected Ferndale water demands over the planning horizon, and existing storage reservoirs within the distribution system, the existing water treatment capacity is sufficient to meet programmed future growth over the 20-year planning horizon, and no impact would occur.

Wastewater Treatment

When evaluating the capacity of the treatment plant the dry weather flow and the wet weather flow are important parameters to consider. Dry weather flows are generally a measure of the wastewater coming from domestic, commercial, and industrial sources. Wet weather flows on the other hand, represent the dry weather flow plus rainwater that enters the collection system through inflow and infiltration. Inflow is predominately due to direct connections from down spouts, area drains, storm drains, and flow in through manhole covers into the

[3] 289.6 gpd per residential account $= \frac{191{,}401\ gpd}{661\ residential\ accounts}$

[4] 407.6 gpd per nonresidential account $= \frac{48{,}099\ gpd}{118\ nonresidential\ accounts}$

[5] 66% of DOWC capacity $= \left(\frac{239{,}500\ gallons\ of\ existing\ \max\ daily\ demand}{362{,}000\ \max\ production\ capacity}\right) * 100$

[6] 73% of DOWC capacity $= \left(\frac{24{,}613\ gpd\ for\ 85\ housing\ units + 191{,}401\ residential\ gpd + 48{,}099\ nonresidential\ gpd}{362{,}000\ \max\ production\ capacity}\right) * 100$

wastewater collection system. Infiltration is groundwater leaking into the wastewater collection system through gaps in the piping and manholes.

Dry weather flow tends to be relatively stable year to year and increases as population and other developments increase, although some variation between years is common. Wet weather flows, on the other hand, can fluctuate year to year based on factors such as the amount and timing of precipitation, groundwater elevation, and the size and condition of the collection system. The condition of the collection system is of critical importance in terms of managing inflow and infiltration into the system. As the collection system ages, inflow and infiltration tend to increase. This is because over time the ground can settle, materials become brittle, and leaks increase. Also, the types of piping used in years past, even when they were new, are simply not as reliable as modern gasketed plastic pipe. Newer portions of collection systems using modern construction materials tend to have lower inflow and infiltration values than older portions of collection systems. Therefore, inflow and infiltration values tend not to grow proportionally with population.

The Ferndale WWTP has a capacity to treat 1.0 million gallons per day (mgd), any additional flow above 1.0 mgd is pumped to the retention pond via three pond pumps (Lost Coast Engineering, 2021). The facility's retention pond serves as a wet-weather flow equalization basin for elevated inflows from storm events that exceed treatment capacity. When flow exceeds treatment capacity, up to 5.0 mgd is sent to the retention pond where it is stored until daily influent flows return to below 1.0 mgd (Lost Coast Engineering, 2021). This allows for the facility to manage up to 6.0 mgd.

During dry weather, when the flows are low, the treatment facility has ample capacity for treating influent flows. In 2020 the average dry weather flow to the WWTP was approximately 0.25 mgd (Northpoint Consulting Group Inc, 2020). The anticipated 2045 population projects an 11% growth over 2020, which would result in an average dry weather flow of approximately 0.28 mgd, which is well within current capacity.

However, during the wet season, inflow and infiltration (I&I) into the City's sewer collection system increases wet weather influent flow. The limiting factor in the ability for a wastewater management system to accommodate additional population is typically the availability of wet weather capacity and management of wet weather flows. The City has a significant I&I problem that limits system capacity during large storm events. Managing wet weather flows is a combination of providing hydraulic and treatment capacity for increased flows during wet weather periods, while also making system improvements to reduce inflow and infiltration and hence reduce peak flows to the treatment plant. Although the peak wet weather flows can vary substantially during storm events, the average wet weather flows for the 2019-2020 wet season was 0.5 mgd (Lost Coast Engineering, 2021). As discussed above, the wet weather flows tend not to grow proportionally with population for new developments. However, to be conservative with the same 11% growth, projected wet weather flow could average 0.56 mgd, which is within the permitted treatment capacity.

In 2021, the City's Public Works Department determined which areas of the system contribute the largest I&I levels and identified a series of sewer line replacements that would decrease I&I and increase efficiency. The City completed a pipe replacement project along California street that resulted in a 3.0 gallon per minute reduction in I&I flows in this area (Gregson, 2023). The City is working towards completing additional I&I reduction projects to further improve operations. Therefore, the wastewater treatment plant has sufficient capacity to meet the needs of the projected growth through 2045, and a less than significant impact would occur.

Stormwater Treatment

The specific stormwater drainage characteristics of new developments will need to be evaluated as specific proposals compliant with the Land Use Element are implemented. The management of stormwater is very specific

to the final design characteristics of developments. Therefore, the specific stormwater management requirements are determined during the formal building permit process.

Stormwater drainage is a major area of concern for the City. Multiple proposed policies and programs minimize potential environmental impacts associated with stormwater drainage and flooding including Policies LU-1.7, LU-3.2, and LU-3.3 and Implementation Programs LU-IP3, LU-IP4, and LU-IP5 in the Land Use Element. The Safety Element commits the City to enacting Policies 1.4, 2.4, 2.5, 2.7, 2.8, and 2.9 and Implementation Programs 2.f, 2.h, 2.l, 2.n, and 2.o which all aim to improve stormwater drainage capabilities or prevent flooding.

Development is subject to these policies that improve drainage, comply with stormwater management practices, and minimize flooding hazards. Development in areas subject to flooding is required to minimize or eliminate flooding hazards and other special interest areas must have at least two points of ingress/egress. Additionally, all development within the City is subject to the Drainage Ordinance which requires development maximize percolation of stormwater into the ground, requires drainage systems that prevent damage to structures in the vicinity, and mandates major drain channels to have capacity for a 25-year runoff frequency. Parcels are required to pay drainage fees based on the amount of impervious area added as a result of development or improvements. Floodplain Management Ordinance 08-02 sets forth numerous provisions for flood hazard reduction including controlling development such as filling and grading to lower potential flood damage.

As specific projects are proposed, property developers will need to create plans that comply with the all permit and other applicable stormwater requirements based on the specific characteristics of the project. Therefore, future projects would not adversely impact water quality via stormwater inputs due to compliance with permit and other City policies. Implementation of the Land Use Element will adhere to these City policies and standards. A less than significant impact would occur.

Electrical Power

Regarding energy utility demands and as discussed in Section 4.7 *Energy,* proposed Project policies include energy efficiency strategies and energy standards to reduce wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operations. These policies include Policies 4.2 and 4.3, and Implementation Programs 4.e and 4.f from the Safety Element. The construction of new dwelling units and businesses would require electrical wiring and connectivity to existing electrical infrastructure; however, this isn't considered an expansion of electrical power. Additionally, with current and future state bills and local initiatives, energy consumption is anticipated to trend downwards as has occurred up to the present.

Per guidance from the California Energy Commission on 2022 Energy Code changes for multi-family and single family residential development guidelines, all new development is supposed to enable pathways for all-electric buildings while reducing impacts on the electricity grid. Development in Ferndale would also be subject to the California Energy Code (Title 24, Part 6 of the California Code of Regulations), which requires certain energy conservation practices and standards to be met. Some standards focus on increasing home insulation, installing solar photovoltaic systems, and utilizing highly efficient air filters in ventilation systems. These policies reduce environmental impacts associated with energy utilities to less than significant levels.

Telecommunications

Existing wireless and fiber optic infrastructure within the study area will continue to serve the population and is anticipated to expand commensurate with population growth. The improved fiber optic connectivity will provide greater telecommunications to the study area either via wireless or hard-wired connectivity.

Overall, due to the location where future development would occur and with adherence with existing regulations and proposed Land Use and Safety Element Update policies, impacts from water, wastewater treatment, stormwater drainage, electric power, and telecommunications facilities would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact UTL-02: Would the Project result in insufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Finding UTL-02: Development facilitated by the Project would not increase water demand above Del Oro Water Company's (DOWC) current water production capacity. DOWC has sufficient capacity to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-2	Policy LU2.7 – Increase Residential Uses
Safety Element	Goal 3	Policy 3.2
Safety Element	Goal 3	Program 3.b

Development resulting from the implementation of the Project would increase the water demand in the City. Del Oro Water Company (DOWC) has 793 connections in the Ferndale District, and currently has been providing water service to 779 total active customer accounts. The existing maximum daily demands of the City are approximately 239,500 gallons per day (gpd), which is about 66 percent of its maximum production capacity of 362,000 gpd. DOWC does not anticipate any issues with its water sources or ability to provide service and is likely to continue to produce 362,000 gpd of water during the planning period.

The Land Use and Safety Elements anticipate an increase of up to 85 additional housing units and 157 additional persons in Ferndale by the year 2045. These 85 residential accounts would require an additional approximately 24,613[7] gpd, so in 2045, DOWC would be using approximately 73[8] percent of its capacity, assuming that the maximum production capacity of the DOWC water sources remained the same and that future residential water demands are similar to those at present. The future water demand of non-residential customers is expected to be far smaller than the residential demand because non-residential customers presently consume approximately 75% less water than residential customers. This level of development is within the water production capacity of DOWC considering the anticipated future demand of both residential and non-residential customers in Ferndale.

[7] 24,613 gpd for 85 additional housing units $= \left(\frac{191{,}401\ residential\ gpd}{661\ residential\ accounts}\right) * 85\ additional\ housing\ units$

[8] 73% of DOWC capacity $= \left(\frac{24{,}613\ gpd\ for\ 85\ housing\ units + 191{,}401\ residential\ gpd + 48{,}099\ nonresidential\ gpd}{362{,}000\ \max production\ capacity}\right) * 100$

During its time as the water service provider to the City, DOWC has never had to impose water restrictions or limitations on the Ferndale District. It's likely that DOWC would only need to impose water limitations in two scenarios: a) should significant drought conditions occur, or b) the water facility experiences severe operation issues. Neither of these scenarios have occurred in recent years and are not projected to occur during the planning period. As such, the Project would have sufficient water supplies available to serve reasonably foreseeable future development during normal, dry, and multiple dry years and impacts would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact UTL-03: Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

Finding UTL-03: Development facilitated by the Project would increase the amount of sewage and thus, demand for wastewater treatment. However, the anticipated development and population growth are not expected to exceed the wastewater treatment requirements because capacity exists under current and projected conditions. As such, impacts would be less than significant.

The Ferndale WWTP has a capacity to treat 1.0 million gallons per day (mgd), any additional flow above 1.0 mgd is pumped to the retention pond via three pond pumps (Lost Coast Engineering, 2021). The facility's retention pond serves as a wet-weather flow equalization basin for elevated inflows from storm events that exceed treatment capacity. When flow exceeds treatment capacity, up to 5.0 mgd is sent to the retention pond where it is stored until daily influent flows return to below 1.0 mgd (Lost Coast Engineering, 2021).

Based on the analysis in UTL-01 above, during dry weather, when the flows are low, the treatment facility has ample capacity for treating influent flows. In 2020 the average dry weather flow to the WWTP was approximately 0.25 mgd (Northpoint Consulting Group Inc, 2020). The anticipated 2045 population projects an 11% growth over 2020, which would result in an average dry weather flow of approximately 0.28 mgd, which is well within current capacity.

During wet weather conditions, there is a considerable increase in the amount of inflow and infiltration (I&I) in the collection system. Ferndale experiences I&I during all times of the year, but the problem is more acute during storm events. Historical records for the City indicate that I&I at the WWTP can average between 3.0 and 4.0 mgd during storm events; there is an estimated 16-fold increase in flows to the plant during these storms (Lost Coast Engineering, 2021). As a major operational challenge of the facility, the I&I hinders standard operations of the plant during storm events. To assist with managing the I&I, the WWTP has a retention pond where excess water is stored until the facility has capacity to treat it. The retention pond has an available storage capacity of around 5.0 mgd. As the pond fills, facility operators must attempt to lower the pond volume in order to prepare for the next storm. There are multiple constraints on how quickly the operators can reduce the pond's volume. The pond's sewage can have large quantities of particles that impede the disinfection process, resulting in a much smaller amount of sewage being drawn from the pond even though the facility could treat a larger volume. Additionally,

precipitation contributes water to the pond, making it more difficult for the pond volume to be reduced (Lost Coast Engineering, 2021).

Managing wet weather flows is a combination of providing hydraulic and treatment capacity for increased flows during wet weather periods, while also making system improvements to reduce inflow and infiltration and hence reduce peak flows to the treatment plant. The City determined that the most impactful way to improve the operation of the facility would be to complete the identified projects that aim to reduce I&I throughout the City (Lost Coast Engineering, 2021). These projects have already been designed with an outline including cost estimates and necessary steps for implementation. Although the peak wet weather flows can vary substantially during storm events, the average wet weather flows for the 2019-2020 wet season was 0.5 mgd (Lost Coast Engineering, 2021). As discussed above, the wet weather flows tend not to grow proportionally with population for new developments. However, to be conservative with the same 11% growth, projected wet weather flow could average 0.56 mgd, which is within the permitted treatment capacity.

Although the amount of I&I results in an operational challenge of the facility, the facility itself has capacity to accommodate additional connections. An additional 100 connections would add an insignificant amount of sewage to the wastewater system due to the fact that these new homes/businesses would add almost no additional I&I and would only add sewage, which is a minor constituent of the overall amount of wastewater being treated at the plant (P. Gregson, Lost Coast Engineering, personal communication, February 13th, 2024).

The Regional Board regularly reviews treatment requirements based on the circumstances and has updated the requirements for the City numerous times over the history of regulating the facility. It is anticipated that the Regional Board will continue to update requirements for the City over time, but since the characteristics of the future wastewater influent stream is anticipated to be similar to what exists today, the planned developments and population growth are not expected to exceed the wastewater treatment requirements that would otherwise be required without the planned growth.

Despite the facility's operation being challenged by I&I during large storm events, additional anticipated development during the planning period would not cause the exceedance of the wastewater treatment capacity of the WWTP. The obstacle preventing the WWTP from providing adequate service in storm events is the maintenance of I&I in the collection system, not community sewage. The City is working towards completing additional I&I reduction projects to resolve this operational challenge. Since the Project's implementation would result in an increase of community sewage, not I&I, the WWTP has the capacity to provide increased wastewater treatment services and serve the additional customers anticipated by the Project including meeting the needs of existing customers. This impact is therefore considered to be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact UTL-04: Would the Project generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Finding UTL-04: Development facilitated by the Project would increase the volume of solid waste generated in the City incrementally as the population increases. The local infrastructure

would have the capacity to accommodate this increased volume. Solid waste reduction goals would not be impaired by the Project. Impacts would be less than significant.

The Project would result in an incremental increase in solid waste generation from construction and operation of development facilitated by the Project. Construction debris would be temporarily increased during the construction phase of individual housing and transportation pathway projects. It is anticipated development would take place slowly over the 20-year lifespan of the Project, and not occur all at once. Once housing units are developed, additional typical household waste would be created by the residents and increase the City's overall solid waste generation.

The City is actively working with its partners across the Humboldt County region towards full compliance with SB 1383 to provide universal organics collection and recycling. Garbage, recycling, and yard waste is collected curbside weekly by Recology Eel River. There are no landfill or recycling centers in the planning area. Active permitted in-County transfer stations include the Humboldt Waste Management Authority facilities in Eureka or Samoa, California and the Recology Eel River Transfer Station in Fortuna, California. Humboldt Waste Management Authority contracts with the Dry Creek landfill located in Medford, Oregon. There are no permitted active landfills in the county.

Waste generated by Ferndale residents is collected by Recology Eel River and brought to the Recology Eel River Transfer Station in Fortuna. The transfer station is a medium volume transfer/processing facility with a maximum permitted site capacity of 456 tons per day, peak loading capacity of 99.9 tons per day, and annual loading capacity of 36,000 tons per year according to its solid waste facilities registration permit 12-AA-0093 (Recology Eel River, 2020). In 2020, residents generated approximately 356 tons, commercial customers generated approximately 365 tons, and self-haul customers from Ferndale generated approximately 578 tons of waste (Humboldt Waste Management Authority, 2021). Together, this resulted in 1,299 tons of solid waste generated in the City in 2020, or approximately 0.9[9] tons of solid waste produced per capita. With an increase of 157[10] residents in the City, solid waste generated in Ferndale is expected to be 1,445[11] tons per year, an increase of 146[12] tons per year or 11.23[13] percent in 2045. Recology Eel River would have the capacity to accommodate increased solid waste volume that may be generated from the projected growth.

The Eel River transfer station has the capacity to accommodate increased solid waste generation, and if needed can expand its capacity through changes in operations and permitting to better accommodate increased solid waste generation that may result from the regional population growth. At the state level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The Project would not conflict with or impede the implementation of such programs. A less than significant impact would occur.

MITIGATION MEASURE

No mitigation measures would be required.

[9] $0.90\ tons\ per\ capita\ per\ year\ of\ solid\ waste = \frac{1{,}299\ tons\ in\ 2020}{1{,}398\ Ferndale\ population\ in\ 2020}$

[10] $157\ new\ residents\ in\ Ferndale = 1{,}528\ Ferndale\ high\ growth\ population\ in\ 2045 - 1{,}371\ current\ Ferndale\ population$

[11] $1{,}445\ tons\ per\ year = 1{,}299\ tons\ in\ 2020 + (157\ new\ residents * 0.9\ tons\ per\ capita\ per\ year)$

[12] $146\ increase\ in\ tonnage\ per\ year\ of\ solid\ waste = 1{,}445\ total\ tons\ per\ year\ in\ 2045 - 1{,}299\ current\ total\ tons\ per\ year$

[13] $11.23\%\ increase\ from\ current\ solid\ waste\ tonnage = \frac{146\ increase\ in\ tonnage}{1{,}299\ tons\ in\ 2020}$

Impact UTL-05: Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Finding UTL-05: Additional solid waste generated by new development allowed under the Project would continue to comply with federal, state, and local solid waste management reduction regulations and statutes. The Project policies and programs are designed to encourage actions in compliance with statues and regulations. Impacts would be less than significant.

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Goal 5	Policy 5.4
Safety Element	Goal 5	Policy 5.5
Safety Element	Goal 5	Programs 5.a, 5.i, 5.j, 5.m

The incremental increase in solid waste generation indirectly resulting from the Project as proposed will not change the City's ability to comply with solid waste regulations and statutes in the future. The proposed policies encourage compliance with applicable federal, state, and local management and reduction statutes and solid waste regulations.

The Project's policies and programs encourage waste recycling and proper disposal methods consistent with federal, state, and local solid waste management reduction regulations and statutes. Safety Element Policy 5.5 and Program 5.j aim to foster waste recycling and support efforts by the County by sponsoring waste recycling and disposal days to make the process easier for the community. Additionally, Program 5.i will result in waste drop-off dates and locations being posted on the City's website where it is easily accessible by the public. Policy 5.4 and Program 5.a will inform the public on waste disposal regulations and require all land uses that deal with hazardous waste to comply with these regulations. The City will continue to work with the County to implement and comply with the Integrated Waste Management Plan through Program 5.m

The anticipated rate of population increase is gradual, and the existing recycling programs provided by Recology Eel River and HWMA would modify over time (as needed) to accommodate the population. At the state level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The Project would not conflict with or impede implementation of such programs due to the adequate capacity of regional recycling programs serving the City.

Through the policies and programs of the Land Use and Safety Element Update, the City aims to inform residents about waste reduction and recycling programs and create opportunities for responsible waste disposal made available in the City for local residents and businesses in alignment with federal, state, and local solid waste management reduction regulations and statutes. Thus, the impacts of the Project would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

33 U.S.C. §1251 et seq. (1972). Clean Water Act.

33 U.S.C. §1362(14). (1972). Definitions.

40 CFR § 122.26(b)(8). (s.d.). Stormwater Discharges.

AB1826. (2014). Mandatory Commercial Organics Recycling.

AB341. (2011). Mandatory Commercial Recycling Law.

Alexander, S. (2024). Coastal Commission OK's massive North Coast broadband permit. *Times Standard*.

California Natural Resources Agency. (2014). *California Water Action Plan .*

California Public Utilities Commission. (s.d.). *Direct Access*. Récupéré sur https://www.cpuc.ca.gov/consumer-support/consumer-programs-and-services/electrical-energy-and-energy-efficiency/community-choice-aggregation-and-direct-access-/direct-access

CalRecycle. (2019). *Jurisdiction Diversion/Disposal Rate Summary*. Récupéré sur https://www2.calrecycle.ca.gov/LGCentral/DiversionProgram/JurisdictionDiversionPost2006

CalRecycle. (2024). *Recology Eel River (12-AA-0093)*. Récupéré sur SWIS Facility/Site Inspections: https://www2.calrecycle.ca.gov/SolidWaste/SiteInspection/Index/528

City of Eureka. (s.d.). *Recycling, Solid Waste & Organics*. Récupéré sur https://www.eurekaca.gov/260/Recycling-Solid-Waste-Organics

City of Ferndale. (1994). *Drainage Ordinance 94-01.*

City of Ferndale. (2008). *Floodplain Management Ordinance 08-02.*

City of Ferndale. (2022). *Drainage Master Plan Update.*

City of Ferndale. (s.d.). *Recycling*.

Congressional Research Service. (2005-2007). *Telecommunications Act: Competition, Innovation, and Reform.*

Del Oro Water Company. (2022). *Water Quality Report - Ferndale District.*

Del Oro Water Company. (s.d.). *Drought Information*. Récupéré sur https://delorowater.com/drought-information/#1675445677189-24effbc9-1220

ENERGY STAR. (s.d.). *How ENERGY STAR Works*.

Gregson, P. (2023). *Post Performance Report: City of Ferndale Project 3 California Street Sewer Replacement.*

Humboldt County Board of Supervisors. (2017). *Humboldt County Onsite Wastewater Local Agency Management Program.*

Humboldt Local Agency Formation Commission. (2018). *Municipal Service Review.* City of Ferndale.

Humboldt Waste Management Authority. (2021). *Waste Characterization Study.*

Lost Coast Engineering. (2021). *City of Ferndale Energy Savings Project Engineering Report .*

Manhard Consulting. (2014). *Ferndale Wastewater Treatment Plant .*

North Coast Regional Water Quality Control Board. (2005). *Watershed Planning Chapter.*

North Coast Regional Water Quality Control Board. (2012). *Order No. R1-2012-0025 for Administrative Civil Liability.*

North Coast Regional Water Quality Control Board. (2018). *Waste Discharge Requirements and Water Recycling Requirements for City of Ferndale WWTP.*

Northpoint Consulting Group Inc. (2020). *City of Ferndale Wastewater Treatment Plant Pond Intake Study.*

Office of Water Programs. (2022). *Table TA-3.2, Technical Appendix 3 (TA-3): Analysis of Environmental Effects on Urban Wastewater Collection, Treatment, and Reuse Systems: Literature, Methods, and Results.*

Pacific Gas & Electric Company. (s.d.). *Explore PG&E Rebates*.

Pacific Gas & Electric Company. (s.d.). *Understand how PG&E delivers your energy*.

Porter-Cologne Water Quality Control Act. (1969). *Calif. Water Code Division 7 Water Quality §§13000-16104* .

Recology. (s.d.). *About Us*. Récupéré sur Recology Eel River: https://www.recology.com/recology-eel-river/about-us/

Recology Eel River. (2020). *Fortuna Transfer Station Facility Plan.* Recology Waste Zero.

Recology Eel River. (2020). *Registration Permit Application .*

Redwood Coast Energy Authority. (s.d.). *Homepage*.

SB 350. (2015). Clean Energy and Pollution Reduction Act of 2015.

SB610. (2001). Water Supply Planning.

Scully, T. (2023, May 15). *Featured Farm: California Organic Dairy Farming: Grazing Green at Cahill Dairy, Ferndale, California Owned and operated by the Cahill Family*. Récupéré sur NODPA: https://www.nodpa.com/n/8100/Featured-Farm-California-Organic-Dairy-Farming-Grazing-Green-at-Cahill-Dairy-Ferndale-California-Owned-and-operated-by-the-Cahill-Family#:~:text=Ferndale%2C%20bordered%20by%20the%20Pacific,herds%20are%20under%20100%20head.

United States Environmental Protection Agency. (2023). *Stormwater Phase II Rule Fact Sheet 2.0.*

Waraich, S. (2022, November 2). *'Situation is dire': Humboldt County supervisors send letter supporting drought relief for dairy farmers*. Récupéré sur Times Standard: https://www.times-standard.com/2022/11/02/situation-is-dire-humboldt-county-supervisors-send-letter-supporting-drought-relief-for-dairy-farmers/

Water Code §§ 13000 et seq. (1969). Porter-Cologne Water Quality Control Act.

4.21 WILDFIRE

This section summarizes the wildfire risks in and around the Planning Area and analyzes the impacts related to wildfire risks and wildfire evacuation due to the Project. This section incorporates information and analysis from the 2021 Humboldt County Fire Chief's (HCFCA) Association Annual Report, 2019 Humboldt County Community Wildfire Protection Plan which includes the 2019 EEL Planning Unit Action Plan, 2019 Humboldt County Emergency Operations Plan (EOP), and the 2019 Humboldt County Operational Area Hazard Mitigation Plan.

ENVIRONMENTAL SETTING

DEFINITIONS

Aspect – Aspect is the direction that a slope faces, and it determines how much radiated heat the slope will receive from the sun.

Disturbances – Various activities that disrupt the normal state of the soil, such as digging, erosion, compaction by heavy equipment, etc.

Fire Hazard – A fuel complex that determines the degree of ease of ignition and of resistance to control. A hazard is used in relation to topography, introduced in the previous section, and fuel complex. Fire hazard is a description of the fuels available to burn in a given area and how they could burn. It can be influenced by past disturbances or management activities that alter the hazard for better or worse, including changing the site moisture. It is also affected by the volume and spatial arrangement of fuels.

Fire Hazard Severity – Determined by CalFire, the classification of a fire hazard severity zone (FHSZ) as Moderate, High, or Very High fire hazard is based on a combination of how a fire will behave and the probability of flames and embers threatening buildings. Zone boundaries and hazard levels are determined based on vegetation. For wildland areas, the current FHSZ model uses burn probability and expected fire behavior based on weather, fuel, and terrain conditions. For urban areas, zone boundaries and hazard levels are based on vegetation density, adjacent wildland FHSZ scores, and distance from wildlands. Each area of the map gets a score for flame length, embers, and the likelihood of the area burning. Scores are then averaged over the zone areas.

Fire Regime – Fire regime is a description of fire's historic natural occurrence, variability, and influence on vegetation dynamics in the landscape. The five historical fire regimes are classified based on the average number of years between fires (fire frequency) combined with the fire severity (amount of consumption of the dominant overstory vegetation). The difference in fire regime between pre- and post-European settlement is described by the condition class, or the degree of departure from the historical natural fire regime.

Fire-Return Interval – Number of years between two successive fire events for a given area. Also referred to as fire interval or fire-free interval.

Fire Risk – The combination of vegetation, topography, weather, ignition sources, and fire history that leads to fire and/or ignition potential and danger in a given area.

Fuel – Living or dead vegetation located either on the ground, along the surface as brush and small trees, or above the ground in tree canopies. Fuel type can vary fire behavior. Lighter fuel such as grass and leaves, for instance, quickly expel their moisture and burn quickly. Heavier fuel such as tree branches or trunks take longer to warm up and ignite. Areas of dead vegetation, particularly areas affected by pests or disease, are more susceptible to wildfire.

Fuel Complex – The volume, type, condition, arrangement, and location of fuels.

Intermix – Intermix refers to the situation where structures and vegetation (wildland) are closely intermingled or interwoven.

Local Responsibility Area (LRA) – The area in the state where the financial responsibility of preventing and suppressing fires primarily rests on the local jurisdiction. Lands within the exterior boundaries of a city are LRA.

Perturbance – In the context of ecosystems and wildfires, perturbance typically refers to a disturbance event that affects the structure and composition of the ecosystem. The process by which a stand-replacing fire event removes above-ground vegetation but allows for the below-ground material to remain intact, enabling sprouting and the rapid recolonization of the ecosystem immediately following the fire.

Rate of Spread (ROS) – The rate of spread (ROS) for a fire refers to the speed at which the fire is advancing across a landscape. It is a critical metric used in assessing the intensity and behavior of a wildfire. ROS is typically measured in units of distance per unit of time, such as feet per minute or meters per second.

Slope – Slope, in the context of wildfires, refers to the incline or steepness of the terrain. It plays a crucial role in influencing the behavior and spread of fires across landscapes.

Stand-replacing Fire – A fire that kills most or all of the trees in a section of forest.

State Responsibility Area (SRA) – The area in the state where the State of California has the primary financial responsibility for the prevention and suppression of wildland fires, which does not include lands within the exterior boundaries of a city. No state regulations apply in LRA areas unless within a Very High Fire Hazard Zone.

Wildfire – Wildfires differ from other fires in that they take place in areas of grassland, woodlands, brushland, scrubland, peatland, and other wooded areas that act as a source of fuel, or combustible material. Buildings may become involved if a wildfire spreads to adjacent communities. The primary factors that increase an area's susceptibility to wildfire include slope and topography, vegetation type and condition, and weather and atmospheric conditions. The Office of Planning and Research has recognized that although high-density structure-to-structure loss can occur, structures in areas with low- to intermediate-density housing were most likely to burn, potentially due to intermingling with wildland vegetation or difficulty of firefighter access. Fire frequency also tends to be highest at low to intermediate housing density, at least in regions where humans are the primary cause of ignitions (California Natural Resources Agency 2018).

Wildland-Urban Interface – The wildland-urban interface (WUI) is the zone where human-made structures and infrastructure are in or near areas prone to wildfires. When these structures are intermixed with natural vegetation, it increases the risk of wildfires impacting homes and communities. CAL FIRE defines WUI as areas where human (development) encroaches into natural areas considered as areas with a high and very high FHSZ.

Wind Vector – Wind vector refers to the direction and speed of wind flow in a specific area. It is an important parameter to consider when assessing potential environmental impacts of a project, particularly for issues related to air quality, dispersion of pollutants, and potential effects on vegetation and wildlife. Understanding the wind vector helps in evaluating how wind patterns may influence the dispersion of emissions and the overall environmental conditions in a project's vicinity.

WILDFIRE CONDITIONS AND SETTING

Regional and Local Fire History

Historically, fire has played a crucial role in the ecosystems of the Humboldt Bay region (Humboldt County, 2019). Fire history studies spanning the past millennium reveal a diverse pattern of fire frequencies in northwestern California. Indigenous tribes engaged in forest management practices that involved intentional, low-intensity burns to improve forest health and mitigate the build-up of highly flammable vegetation. Native Americans frequently ignited fires nearly annually in landscapes close to villages or areas cultivated for food and basketry materials like grasslands and oak woodlands, resulting in a higher frequency of fires in vegetation adjacent to their use areas compared to the same vegetation type at a greater distance (Humboldt County Fire Safe Council, 2019).

The City also has a rich ranching and agricultural heritage, with early settlers in the late 1800s employing deliberate burning to clear and maintain grasslands for grazing animals. However, a robust fire suppression initiative initiated in the 1930s has led to the accumulation of dense and flammable vegetation in the understories of forests. This has heightened the risk of severe wildfires in some parts of the region, as the ecosystems, adapted to regular low-intensity fires, are now threatened by overcrowded vegetative conditions and an abundance of accumulated fuel (Humboldt County, 2019). Additionally, aggressive timber harvesting practices during the 20th century exacerbated the damage to forest ecosystem health, introducing large quantities of slash to the fuel load and disrupting the natural distribution of species and age classes within the forests.

Recent fire history in the Eel River Planning Unit surrounding Ferndale has been very minimal. Although Humboldt County has experienced over thirty wildfires larger than 200 acres since 1997, the City itself hasn't had any major fires in its general vicinity in the last century (Humboldt County Fire Safe Council, 2019). There have only been six fires in the Eel River Valley area larger than ten acres since 1908 (Humboldt County, 2019). The most recent wildfire in the region around Ferndale is a five-acre fire in pasturelands on the Wiyot Reservation in 2008 and it resulted in no structural damage. There was also a five acre fire adjacent to the Wiyot Reservation in 1996 which also did not result in structural damage.

Wildfire Setting of Planning Area

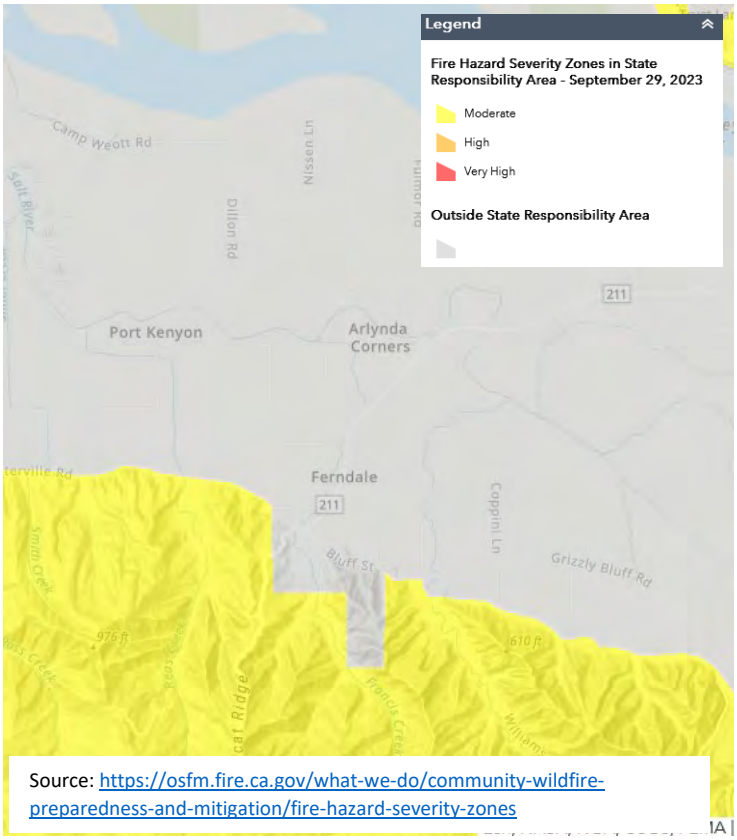
In California, wildfire prevention and suppression efforts involve federal, state, and local agencies. Federal agencies manage federal lands in Federal Responsibility Areas, while non-federal lands in unincorporated areas designated with watershed significance are classified as State Responsibility Areas (SRA), overseen by CAL FIRE. Incorporated areas and specific unincorporated lands fall under Local Responsibility Areas (LRA). CAL FIRE, mandated by law, maps significant fire hazards using Fire Hazard Severity Zones (FHSZs), categorizing them as Moderate, High, and Very High. Areas within the Very High FHSZ are subject to specific building and vegetation management requirements for property damage mitigation and life safety. Humboldt County Fire Safe Regulations, known as "SRA Fire Safe Regulations," outline wildland fire protection standards for lands within State Responsibility Areas.

CAL FIRE has responsibility for wildland fires on SRA's, which includes most of the steeply sloped and forested areas in the southern portion of the Planning Area. When staffed, CAL FIRE provides emergency response for wildland fires, structure fires, vehicle accidents and medical aid calls, and support for local fire agencies as needed. CAL FIRE and the Forest Service are at peak staffing from July through October. During the off-peak part the year, CAL FIRE responds as available (Humboldt County 2011).

The wildfire hazard in the Planning Area has been assessed using CAL FIRE's Fire and Resource Assessment Program (FRAP), considering factors such as fuels, terrain, and weather. Fire Hazard Severity Zones, derived from

this analysis, form the basis for implementing mitigation strategies to minimize risks to buildings during wildland fires. These zones dictate specific building codes aimed at reducing the ignition potential of structures. According to the 2022 FRAP map, the southern portion of the Planning Area that is within the SRA is a Moderate Fire Hazard Severity Zone (FRAP, 2022). The area surrounding Ferndale and within City boundaries, falls within Local Responsibility Area (LRA), which is outside of CAL FIRE's jurisdiction and is therefore not zoned for Fire Hazard Severity.

Figure 4.21-1: Fire Hazard Severity in State Responsibility Area



Source: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

Fire Hazard Severity in State Responsibility Area

The potential for wildfires fires is influenced by various factors, including ground cover, vegetation, the flammability of building materials, slope of the terrain, weather patterns, and the adequacy of access, water supply, and water pressure. The presence of structures constructed with combustible materials, such as wood siding and shake roofs, surrounded by flammable landscaping, further heightens the vulnerability of residents to the potential impact of wildfires. The southern hillside areas of Ferndale contain structures and other human development that interface or intermingle with undeveloped wildland areas.

Weather and Atmospheric Conditions

The climate in Ferndale exhibits seasonal patterns with wet and dry seasons. Summers are brief, cool, and dry, with temperatures typically ranging from 42°F to 62°F; the winters are protracted, cold, and wet, characterized by temperatures fluctuating from 42°F to 55°F (Weather Spark, 2023). This region experiences a substantial volume of rainfall and is frequently shrouded in fog for a considerable part of the summer months (Humboldt County, 2019). The wetter period spans from October to April, with December being the rainiest month, experiencing an average of 13.7 wet days (Weather Spark, 2023). The drier season is from April to October, with July having the fewest wet days.

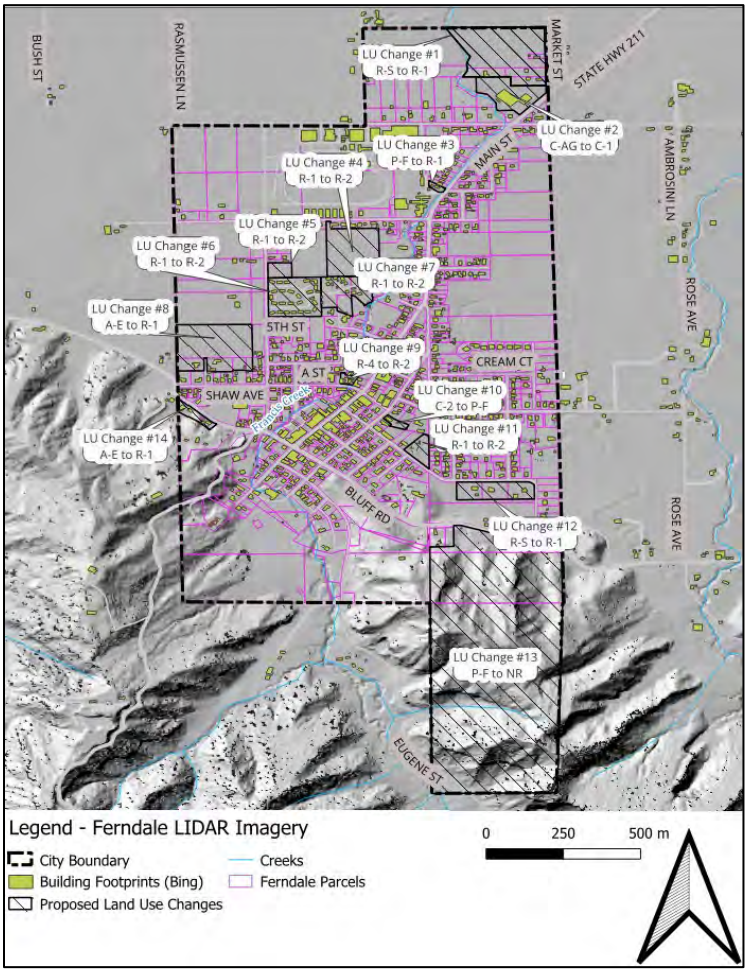
The town also experiences seasonal variations in wind speed. The windier period extends from April to July, with June being the windiest month, averaging an hourly wind speed of 11.7 miles per hour (Weather Spark, 2023). In contrast, the calmer period lasts from July to April, with October registering the lowest average hourly wind speed at 9.2 miles per hour. Typically, the prevailing wind follows a west to northwest direction in the afternoon. It is customary for a substantial upriver wind to occur during the afternoon in the Eel River canyon and Van Duzen River drainage areas around the City (Humboldt County, 2019).

Slope and Aspect

Sloping terrain increases a community's vulnerability to wildfires due to several factors such as speed of wildfire rate of spread (ROS) on steep slopes and the difficulty steep slopes pose to firefighting efforts. Steeper slope,

whether natural or human-made, impacts the speed of fire movement, generally causing fires to spread faster uphill than downhill in the absence of winds (National Wildfire Coordinating Group, n.d.). This increased ROS on uphill slopes is influenced by factors such as the proximity of flames to dehydrating and preheating fuel, the uphill movement of wind currents during the day pushing heat and flames toward new fuels, and the creation of a draft by upslope fires, further enhancing ROS. Understanding these slope-related dynamics is crucial in assessing the behavior and potential dangers of fires in various terrains. The topography within the Planning Area is primarily relatively flat with slopes less than 5 percent. As shown below in Figure 4.21-2 there are steeper slopes south of Bluff Road.

Figure 4.21-2: Steep Slope Areas in Ferndale



The slope aspect plays a crucial role in influencing various environmental factors such as the impact of the sun's heat on plants, trees, air temperature, and soil moisture retention (National Wildfire Coordinating Group, n.d.). Solar radiant heating, in turn, affects fire behavior by influencing fuel moisture and ignition points. In the Northern Hemisphere, south-facing slopes receive direct sunlight, resulting in higher temperatures and lower humidity compared to slopes facing other directions. This heightened temperature contributes to the rapid loss of fuel and soil moisture, making southern slopes more susceptible to fires, especially with drier and lighter fuels like grass.

Vegetation

The fuel for wildfires primarily comes from vegetation, which undergoes changes in its wildfire potential over time due to seasonal growth, die-back, and various factors like the spread of plant diseases and introduced pests. The relationship between vegetation and wildfires is intricate, with plants exhibiting a range of fire susceptibility from being fire-resistant to highly flammable.

The coastal area around the City of Ferndale features a forest predominantly composed of redwood and Sitka spruce, boasting a biomass equivalent to or surpassing that of a tropical rainforest (Humboldt County, 2019). In the vicinity of Ferndale, including the City itself, the area is characterized by agricultural land, incorporating hardwood and conifer fuels predominantly in the southern section of the planning area for surface fuels. The following table, Table 4.21-1, describes approximate percent land coverage by vegetation type in the area around Ferndale.

Table 4.21-1: Land Cover Estimates by Vegetation Type in Proximity to the City of Ferndale

Vegetation Type	Approximate Percent Land Cover in Surrounding Area		
	Within 2 miles	Within 10 miles	Within 50 miles
Cropland	49%	-	-
Trees	41%	34%	30%
Water	-	26%	54%

Source: (Weather Spark, 2023)

WILDFIRE PLANNING AND RESOURCES

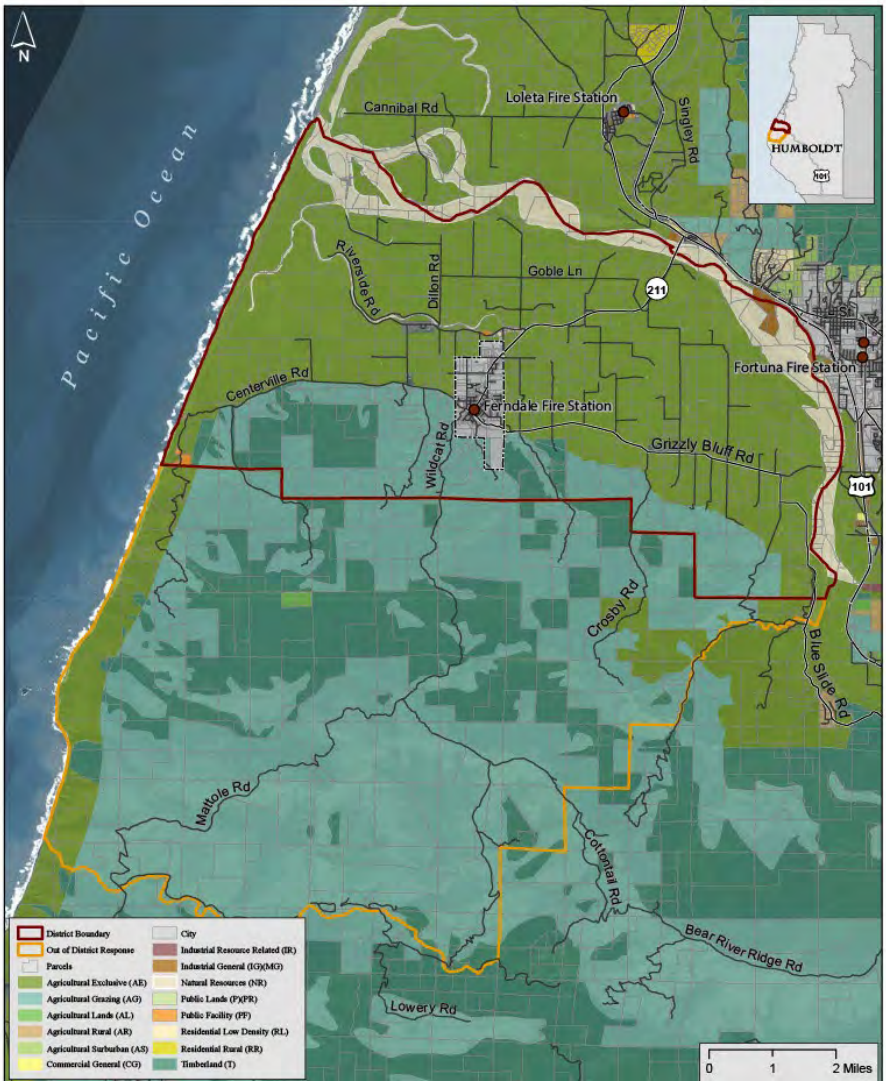
Fire Protection Agencies

The Ferndale Fire Protection District (FFPD) is a special district responsible for providing fire protection services through the Ferndale Volunteer Fire Department (VFD) operating as an independent single-purpose special district. The VFD is the fire services agency that serves the City and provides essential fire, rescue, and emergency medical services for 2,745 residents (Humboldt County, 2019; Humboldt LAFCO, 2018). Its jurisdiction extends beyond the City of Ferndale, covering over 44.2 square miles, including the surrounding unincorporated communities of Grizzly Bluff, Arlynda Corners, Centerville, Port Kenyon, Wildcat Ridge, and regions to the south of the Eel River. In addition to its primary service area, Ferndale VFD extends "good will service" to nearly 59 square miles outside of District boundaries. The VFD operates with a dedicated team comprising of one fire chief, two assistant chiefs, four companies of volunteers (each led by a captain and a lieutenant), and a fifth company comprised of retired members. They currently have 22 active fire personnel on their roster (D. DelBiaggio, personal communication, 2023). The figure below shows the Ferndale VFD service area and associated land use designations outside Ferndale City limits.

Ferndale VFD is located in the fire station at 436 Brown Street in Ferndale, as shown in Figure 4.21-3. Across from the fire station on Brown Street is an additional building used as an annex and equipment bay. This location houses three engines (two Type-1 engines and one Type-2 engine), two water tenders, a rescue vehicle, a wildland quick attack engine, and two Polaris UTV's. Other equipment includes around 20 self-contained breathing apparatuses, 38 structural and 10 wildland personal protective equipment for the firefighters, one thermal imaging camera, 24 handheld radios, one GPS system, five AEDs, and a CPR Lucas device (Humboldt LAFCO, 2018; Fire Chief's Association of Humboldt County, 2023). Annually, they respond to around 200 calls for assistance, encompassing a range of incidents, including fires, medical emergencies, vehicle accidents, and more (Humboldt LAFCO, 2018).

The area west of Highway 101 surrounding Ferndale, falls under the wildfire management jurisdiction of the Local Responsibility Area (LRA). The remaining area is State Responsibility Area (SRA) where wildfires are the responsibility of CAL FIRE. Fire dispatch services are facilitated by the CAL FIRE Interagency Command Center. The nearest CAL FIRE station is located in Fortuna, equipped with one Type III engine, one dozer, and overseen by a Battalion Chief. Additionally, the Rohnerville Air Attack Base and Mount Pierce communications tower, situated approximately 12 miles away from the City of Ferndale, serve the entire Battalion 3 region (CalFire, 2022).

Figure 4.21-3: Ferndale Fire Protection District and Land Use Designations



Wildfire Risk Reduction Measures

The CWPP has identified humans as the most likely ignition source for fires with vehicle accidents, smoking, playing with fire, poorly maintained brush pile burns, and incendiary burning as a few examples of past ignition causes (Humboldt County, 2019). Lightning is the most probable natural cause of fire starts within the Eel River Valley region. To mitigate these wildfire risks, the City, County, and State have adopted several wildfire risk reduction plans and policies.

A Local Fire Safe Council (FSC) is a community-based organization composed of diverse stakeholders, including residents, landowners, businesses, and public agencies, working collaboratively to reduce the risk of wildfire in a specific geographic area. These councils typically operate at the local or regional level and are governed by a board of directors or steering committee. One potentially important action a local FSC could involve itself with is organizing community events, workshops, and training sessions on wildfire preparedness and response which could facilitate efficient evacuation.

Although there is a Humboldt County FSC (HCFSC), there are currently no local fire safe councils in Ferndale or the surrounding area in the Eel Planning Unit of the Humboldt CWWP (Humboldt County, 2019). The 2019 CWWP does note that there is potential for a new FSC to form in the Eel Planning Unit (Humboldt County Fire Safe Council, 2019). The HCFSC works with communities to offer support for entering the recognition process of a local FSC. Recognition would include establishing a committee or board, crafting an action plan informed by a thorough community wildfire risk assessment, committing to a minimum per capita investment in wildfire-risk reduction endeavors, and organizing at least one educational event annually as mentioned previously.

A FSC is not the only way to prepare a community for emergency response or evacuation. A Community Emergency Response Team (CERT) is a program designed to train community members in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT members are volunteers who are trained to assist their communities during emergencies or disasters when professional responders may be overwhelmed or delayed in their response. CERT training empowers individuals to take an active role in disaster preparedness, response, and recovery efforts within their neighborhoods and communities.

There are two CERTs within 20 miles of the City of Ferndale who can assist with emergency response. The newest team is Ferndale CERT which started by training eleven individuals in 2021 and based within the City itself (KIEM, 2021; Javid, 2021). In addition to the Ferndale CERT, there is the Eel River Valley (ERV) CERT program which began in 2009 with funding from a federal Readiness and Emergency Management for Schools (REMS) grant. The ERV-CERT is based in the Fortuna Union Elementary School District but also covers Carlotta, Ferndale, Fortuna, Hydesville, Loleta, Rio Dell, and Scotia.

Eel River Valley CERT is part of the Eel River Valley Emergency Preparedness Team (ERV-EPT), a multi-agency team of volunteers working to enhance emergency preparedness in the Eel River Valley (City of Ferndale, 2022). Participating agencies include:

- Humboldt County Sheriff's Office of Emergency Services
- Cal Fire
- St. Joseph Hospital
- Redwood Memorial Hospital
- City Ambulance
- Volunteer Fire Departments (including Fortuna, Ferndale, Scotia, and Rio Dell)
- Police Departments (including Fortuna, Ferndale, and Rio Dell)
- Ferndale Mayor and City Manager
- Loleta CSD
- Humboldt County Dept. of Health & Human Services
- North Coast Schools' Insurance Group (NCSIG)
- Eel River Valley Readiness and Emergency Management for Schools (ERV-REMS)
- Eel River Valley schools (including Academy of the Redwoods, Fortuna Middle School, Fortuna High School, Ferndale Elementary, Ferndale H.S., Toddy Thomas Middle School, Loleta Elementary, Fortuna Elementary (South), Rio Dell Elementary)
- Community groups (including Loleta Chamber of Commerce, Loleta Community Church, Loleta Community Resource Center, Fortuna Community Services, and Hydesville Community Church)

REGULATORY SETTING

FEDERAL

Executive Order 13855

Secretary Order 3372 (Reducing Wildfire Risks on Department of the Interior Land Through Active Management) provides specific directions and timelines to the bureaus in the Department of the Interior that play a role in managing wildland fire as they work to meet the mandates of Executive Order 13855. Executive Order 13855 emphasizes that federal agencies must collaborate with state and local institutions and incorporate active management principles into all land management planning efforts in order to address the challenges of wildland fire. Section 5 of the executive order directs the Secretaries of Interior and Agriculture to jointly develop a Wildfire Strategy in collaboration with Federal, State, tribal, and local partners, by December 31, 2020, that supports local Federal land managers in project decision- making and informs local fire management decisions related to forests, rangelands, and other Federal lands, thereby protecting habitats and communities, and reducing risks to physical infrastructure.

Healthy Forests Restoration Act of 2003

The Healthy Forests Restoration Act of 2003 is a U.S. federal law aimed at reducing wildfire risks and promoting forest health. It grants authorities tools to expedite forest management activities, such as thinning and controlled burns, to mitigate wildfire threats and improve ecosystem resilience. The law emphasizes collaboration between federal, state, and local agencies to address forest management challenges and protect communities from wildfire hazards. The Act further provides that, in a Community Wildfire Protection Plan, communities themselves may define the sizes and boundaries of their Wildland-Urban Interface areas. Based on local topography, weather, wildland fuels, and other factors, Willits as a community may determine an appropriate distance away from their population centers within which vegetation reduction projects should be undertaken to protect their communities.

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a state-level mitigation plan as a condition of disaster assistance. There are two different levels of state disaster plans: “Standard” and “Enhanced.” States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act also established new requirements for local mitigation plans.

National Fire Plan

The National Fire Plan was developed in August 2000, following a historic wildfire season. Its intent is to establish plans for active response to severe wildfires and their impacts to communities while ensuring sufficient firefighting capacity. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

STATE

Forest Practice Act

The California Department of Forestry and Fire Protection (CalFire) enforces the laws that regulate logging on privately owned lands in California. These laws are found in the Forest Protection Act, enacted in 1973 to ensure that logging is done in a manner that preserves and protects fish, wildlife, forests, and streams. Each year CalFire foresters review on average 500 to 1,400 Timber Harvesting Plans (THPs), which are submitted by private landowners and logging companies who want to harvest their trees. The foresters also conduct over 6,500 site inspections each year. The reviews and inspections ensure protection of watersheds and wildlife, as well as

renewal of timber resources. Article 8 of the Forest Practice Act requires timber operators to observe fire prevention and control rules and to annually submit a fire suppression resources inventory to CalFire.

California Board of Forestry

The Board of Forestry maintains fire safe road regulations as part of Title 14 of the California Code of Regulations (CCR). This includes requirements for road width, surface treatments, grade, radius, turnarounds, turnouts, structures, driveways, and gate entrances with SRAs. These regulations are intended to ensure safe access for emergency wildland fire equipment and civilian evacuation.

California Fire and Building Codes (2019)

The California Fire Code is Chapter 9 of CCR Title 24. It establishes the minimum requirements consistent with nationally recognized good practices to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structure, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of substances that may pose a threat to public health and safety.

The California Fire Code regulates the use, handling and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code (CBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification. The provisions of this Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or appurtenances connected or attached to such building structures throughout California.

More specifically, the Fire Code is included in Title 24 of the CCR. Title 24, part 9, Chapter 7 addresses fire-resistances-rated construction; CBC (Part 2), Chapter 7A addresses materials and construction methods for exterior wildfire exposure; Fire Code Chapter 8 addresses fire related Interior finishes; Fire Code Chapter 9 addresses fire protection systems; and Fire Code Chapter 10 addresses fire related means of egress, including fire apparatus access road width requirements. Fire Code Section 4906 also contains existing regulations for vegetation and fuel management to maintain clearances around structures. These requirements establish minimum standards to protect buildings located in FHSZs within SRAs and Wildland-Urban Interface (WUI) Fire Areas. This code includes provisions for ignition-resistant construction standards for new buildings. The City of Ferndale has adopted the 2019 California Fire Code.

Wildland-Urban Interface Building Standards

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the CCR Title 24, Part 2, known as the 2007 CBC. These codes include provisions for ignition-resistant construction standards in the WUI.

Interface zones are areas with dense housing adjacent to vegetation that can burn and meeting the following criteria:

- Housing density class 2 (one house per 20 acres to one house per 5 acres), 3 (more than one house per 5 acres to one house per acre), or 4 (more than one house per acre)
- In Moderate, High, or Very High Fire Hazard Severity Zone

- Not dominated by wildland vegetation (i.e., lifeform not herbaceous, hardwood, conifer, or shrub)
- Spatially contiguous groups of 30-meter cells1 that are 10 acres and larger

Intermix zones are housing development interspersed in an area dominated by wildland vegetation and must meet the following criteria:

- Not interface
- Housing density class 2
- Housing density class 3 or 4, dominated by wildland vegetation
- In moderate, high, or very high fire hazard severity zone
- Improved parcels only
- Spatially contiguous groups of 30-meter cells 25 acres and larger

Influence zones have wildfire-susceptible vegetation up to 1.5 miles from an interface zone or intermix zone.

California Fire Safe Regulations

California Fire Safe Regulations (Public Resources Code Section 4290) are a set of state regulations applicable within State Responsibility Areas aimed at reducing the risk of wildfires and promoting fire safety in areas prone to wildfire hazards. It regulates firebreaks, which are created by clearing or removing vegetation in order to prevent or control the spread of fires. They are designed to provide defensible space and fire protection for new construction and ensure adequate emergency access: increased property line setbacks for all applicable construction; on-site water storage for fire protection, driveway/roadway types and specifications based on designated usage; all weather driveway/roadway surfaces being engineered for 75,000 pound vehicles; maximum slope of 16 percent; turnout requirements; gate requirements and setbacks, parking standards, fuels reduction regulations, etc. The section outlines the legal process for local fire protection agencies to establish, maintain, and enforce firebreaks on private properties when necessary for fire prevention and public safety. It grants these agencies the authority to enter the properties for inspection, maintenance, and construction of firebreaks while adhering to specific guidelines and procedures.

California Fire Safe Regulations are adopted by Humboldt County Fire within Title III - Division 11, Land Use and Development, are known as the "SRA Fire Safe Regulations" and constitute the wildland fire protection standards of the County for lands within State Responsibility Areas. The unincorporated areas to the south of Ferndale fall within the SRA area.

The California Fire Plan

The Strategic Fire Plan for California is the State's road map for reducing the risk of wildfire. The most recent version of the Plan was adopted in January 2019 and directs each Cal Fire Unit to revise and update its locally-specific Fire Management Plan (Cal Fire 2018). These plans assess the fire situation within each of the 21 Cal Fire units and six contract counties. These plans address wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their geographical boundaries.

California Office of Emergency Services

The California Office of Emergency Services (CalOES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is federally required under the Disaster Mitigation Act of 2000 for the State to receive Federal funding. The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance.

State Emergency Plan

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction, and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all State agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. The Act further describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's Standardized Emergency Management System (SEMS), which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies (CalOES 2022). The SEMS incorporates the functions and principles of the Incident Command System, the Master Mutual Aid Agreement, existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs.

The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and state. CalOES divides the state into several mutual aid regions. The Planning Area is located in Mutual Aid Region II, which includes Del Norte, Humboldt, Mendocino, Sonoma, Lake, Napa, Marin, Solano, Contra Costa, San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey Counties (CalOES 2019).

Government Code Sections 65302 and 65302.5, Senate Bill 1241 (Kehoe) of 2012

Senate Bill (SB) 1241 requires cities and counties to address fire risk in SRAs and Very High FHSZs in the safety element of their general plans. The bill also directed amendments to the CEQA Guidelines Appendix G environmental checklist to include questions related to fire hazard impacts for projects located in or near lands classified as SRAs and Very High FHSZs.

Government Code Section 65302, Senate Bill 99

SB 99 amended Gov. Code § 65302 as it relates to land use by mandates a thorough examination and revision of the safety element, incorporating details essential for pinpointing residential developments in hazard zones lacking a minimum of two emergency evacuation routes. Essentially, this legislation aids in identifying neighborhoods and households within hazard areas facing restricted accessibility. While the legislative focus is on designated hazard zones, the evacuation assessment encompasses all residential developments in the City. This includes those beyond designated hazard areas, shedding light on instances where only one emergency evacuation route is available, serving as a comprehensive effort to enhance the City's emergency preparedness.

Government Code Section 65302 and 65302.g.4, Senate Bill 1035 and 379

SB 1035 (Gov. Code § 65302) and SB 379 (Gov. Code § 65302.g.4) mandate that all cities incorporate climate change adaptation and resilience strategies into their general plan safety element. Senate Bill 379 is activated either by the next update of a jurisdiction's local hazard mitigation plan (occurring every five years) or before January 1, 2022, whichever comes first. Building upon Senate Bill 379, Senate Bill 1035 further stipulates that the safety element must be updated every eight years concurrently with the next housing element update.

Government Code Sections 65302.15, Assembly Bill 747 and 1409

Assembly Bill (AB) 747 and AB 1409 (Gov. Code § 65302.15) mandates jurisdictions to delineate evacuation routes, assessing their capacity, safety, and effectiveness across diverse emergency scenarios. Additionally, requires the identification of evacuation sites within the jurisdiction's safety element. To fulfill this obligation, jurisdictions have the option to leverage their Local Hazard Mitigation Plan (LHMP) or emergency operations plan. Compliance is achieved by seamlessly integrating comprehensive details about evacuation routes' capacity, safety, and viability into these documents, with the caveat that the jurisdiction's Safety Element explicitly references the incorporated information.

Government Code Section 65302.6, 8685 Assembly Bill 2140

AB 2140 (Gov. Code § 65302.6, 8685.9) empowers local authorities to incorporate the Local Hazard Mitigation Plan (LHMP) seamlessly into their overall planning framework, specifically within the safety element of the general plan. Encourages integration either through reference or annexation, incentivizing such incorporation post-disaster by offering financial benefits. This includes provisions for covering the local contribution (25 percent non-federal portion) of grant-funded projects related to post-disaster initiatives, subject to legislative approval.

California Public Utilities Commission General Order 166

General Order 166 Standard 1.E requires that investor-owned utilities develop a Fire Prevention Plan which describes measures that the electric utility will implement to mitigate the threat of power-line fires generally. Additionally, this standard requires that investor-owned utilities outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. Fire Prevention Plans created by investor-owned utilities are required to identify specific parts of the utility's service territory where the conditions described above may occur simultaneously. Standard 11 requires that utilities report annually to the California Public Utilities Commission (CPUC) regarding compliance with General Order 166 (CPUC 2017). In compliance with Standard 1.E of this General Order, Pacific Gas and Electric Company adopted a Fire Prevention Plan dated October 31, 2018.

REGIONAL AND LOCAL

Humboldt County Emergency Operation Plan

The Humboldt County Emergency Operation Plan (EOP) addresses the planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Humboldt County (Humboldt County 2015). The Federal Emergency Management Agency (FEMA) approved the Humboldt Operational Area Hazard Mitigation Plan on March 20, 2014. The EOP addresses integration and coordination with other governmental levels when required. The EOP accomplishes the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting Humboldt County.

- Identifies the policies, responsibilities, and procedures required to protect the health and safety of Humboldt County communities, public and private property, and the environmental effects of natural and technological emergencies and disasters.
- Establishes the operational concepts and procedures associated with field response to emergencies, County Emergency Operations Center activities, and the recovery process.

Humboldt County Operational Area Hazard Mitigation Plan

The Humboldt County Operational Area Hazard Mitigation Plan (HMP) 2019 is a multi-jurisdictional plan to identify and reduce hazards before any type of hazard event occurs (Humboldt County 2020a, 2020b). The Hazard Mitigation Plan aims to reduce losses from future disasters such as dam failure, drought, earthquake, fish losses, flooding, landslide, severe weather, tsunami, and wildfire. The Hazard Mitigation Plan also includes a vulnerability analysis and proposed initiatives designed to minimize future hazard-related damage. The 2019 update was approved by the California Governor's Office of Emergency Services in 2019. In 2020 the Federal Emergency Management Agency determined the HMP is eligible for approval pending adoption by participating jurisdictions. The City adopted the HMP on March 18, 2020, to guide pre- and post-disaster mitigation of the hazards identified. The HMP included risk assessment modeling that took into account the following:

- Hazard identification and profiling,
- Assessment of the impact of hazards on physical, social, and economic assets,
- Identification of particular areas of vulnerability,
- Estimates of the cost of potential damage.

The HMP recommends a list of actions to mitigate wildfire risk and recommends the "Priority Action Recommendations" identified in the Community Wildfire Protection Plan (Humboldt County, 2019).

Humboldt County Community Wildfire Protection Plan

The Humboldt County Community Wildfire Protection Plan (CWPP) serves as the guiding document for the work of the Humboldt County Fire Safe Council (Humboldt County 2019). It is a planning tool to help secure funding for numerous projects that have helped residents and community groups prepare for the impacts of wildfire. The CWPP contains six goal areas:

1. Wildfire Ignition Prevention: Reduce human-caused wildfire ignitions;
2. Wildfire Preparedness: Increase community resilience and adaptation to wildfire;
3. Disaster Preparedness: Increase resident's ability to effectively prepare for and survive wildfire;
4. Fire Protection: Support fire protection for people, property, communities, and natural resources;
5. Restoration of Beneficial Fire: Restore beneficial fire at the landscape level;
6. Integrated Planning: Maximize integration of planning efforts to improve community; and ecosystem resilience to wildfire.

The CWPP breaks the County down into 14 planning units in order to gain community feedback and to create individual plans relevant to the particular community. The Plan identifies community assets and values at risk, the wildfire environment, fire protection capabilities, evacuation, community preparedness, wildfire prevention plans, community identified potential projects, and an action plan. The Plan states that evacuation routes within the Planning Unit will depend on the location of the community at risk and law enforcement recommendations based on fire behavior, wind patterns, traffic, and ingress of emergency vehicles.

Humboldt County Title III - Division 11, Land Use and Development

Humboldt County's Fire Safe Regulations, also known as known as the "SRA Fire Safe Regulations" and constitute the wildland fire protection standards of the County for lands within (SRA). These regulations aim to establish minimum wildfire protection standards for building, construction, and development within the State Responsibility Area (SRA), emphasizing the inclusion of basic emergency access and perimeter wildfire protection measures in future design and construction projects. These measures encompass emergency access, signage, building numbering, private water supply reserves for fire emergencies, and vegetation modification, with specified minimum standards outlined for each. The unincorporated areas to the south of Ferndale fall within the SRA area.

Municipal Ordinances

Ferndale Building Inspector/Construction Code Ordinance 2011-01 – The ordinance establishes the Office of Building Inspector, adopting construction codes and standards, setting penalties for violations, and instituting fees for permits and inspections. One such construction code adopted by this ordinance is California Fire Code – 2019 California Fire Code (Part 9 of Title 24) which is based on the 2018 International Fire Code (IFC).

Ferndale Zoning Ordinance 02-02 – this ordinance mandates that homes meet the requirements of the building inspector and fire district of jurisdiction and that vacation rentals are compliant with Fire Code.

Ferndale Subdivision Ordinance 99-04 – This ordinance ensures that street layout in subdivisions are designed to provide for future access to, and not impose undue hardship upon, property adjoining the subdivision. The current ordinance requires subdivisions "reserve strips, or non-access at the end of streets or at the boundaries of subdivisions" that are "dedicated unconditionally to the City when required" which allows for space which can be used to meet state fire safe regulations requiring two points of access for emergency evacuation.

IMPACT ANALYSIS

SIGNIFICANCE THRESHOLDS AND METHODOLOGY

According to Appendix G of the CEQA Guidelines, impacts related to fire risk may be significant if the Planning Area is located in or near state responsibility areas (SRA) or lands classified as very high fire hazard severity zones and the Project would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

The Board of Forestry SRA Viewer was used to assess if the Planning Area were subject to the above CEQA Guidelines (Board of Forestry, 2023). It was determined parts of the Planning Area surrounding the City to the south includes SRA. The most recent FRAP map of Humboldt County State Responsibility Area Fire Hazard Severity Zones identified the area to the south of the City as moderate FHSZ (FRAP, 2022).

PROJECT IMPACTS AND MITIGATION

Impact WF-01: Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Finding WF-01: The Land Use and Safety Elements are consistent with and complementary to other local and regional emergency response and evacuation plans. Therefore, implementation of the two Elements would not substantially impair an adopted emergency response plan or emergency evacuation plan, the impact would be less than significant.

Ferndale is part of the Humboldt County Community Wildfire Protection Plan (CWPP) under the Eel Planning Unit. The Eel Planning Unit spans over 222,000 acres in the southwestern part of Humboldt County, featuring some of the more populated areas outside of the Greater Eureka Area. The landscape is characterized by the lower section of the Eel River basin and its tributary watersheds. A significant confluence of primary waterways and transportation routes occurs in the southern part near Fortuna and Alton, where the Van Duzen River, running parallel to Highway 36, meets the Eel River, paralleled by Highway 101.

The Eel Planning Unit has its own Action Plan that addresses concerns raised by community members during fire planning workshops by prioritizing evacuation planning and education and emphasizing early evacuation for safety, while also encouraging residents to remain vigilant. The plan recommends collaboration with the County Office of Emergency Services (OES), local fire service, and law enforcement as crucial for engaging the community in evacuation preparedness. Typically, evacuations are managed by the Sheriff's Office, allowing the fire service to focus on wildfire management. The plan advocates joint efforts to review established best practices and explore innovative approaches. The plan also identifies specific target areas within the Eel Planning Unit which include Eugene Street and Williams Creek Road for Ferndale.

The Action Plan identifies Highway 101 as the main ingress and egress route for Ferndale. For this reason, the evacuation route for Ferndale residents is to take the closest egress that connects to Highway 101 either by traveling north on Highway 211 or southeast on Grizzly Bluff Rd, which becomes Blue Slide Road (Humboldt County, 2019). Evacuation sites will be established in different locations depending on the anticipated path of the wildfire. Adequate ingress and egress along these smaller roads is vital to a large portion of the community that may need to access primary evacuation routes and for firefighters who will be using the roads to access wildfire incidents. The proposed Land Use and Safety Element Policies are consistent with Eel Planning Unit Action Plan.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.7
Land Use Element	Implementation Programs	• LU-IP1 • LU-IP3
Safety Element	Goal 1	• Policy 1.5
Safety Element	Goal 2	• Policy 2.3 • Policy 2.6
Safety Element	Goal 3	• Policy 3.5

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Goal 5	• Policy 5.1-.4
Safety Element	Goal 6	• Policy 6.3 • Policy 6.4 • Policy 6.6-8
Safety Element	Goal 7	• Policy 7.1-9
Safety Element	Implementation Programs	• Program 1.e • Program 2.a • Program 2.b • Program 2.k • Program 3.c • Program 3.h • Program 3.i • Program 5.c-f • Program 5.h • Program 5.k • Program 5.m • Program 6.b • Program 6.c • Program 7.a-o

The Land Use Element directly interacts with emergency response or evacuation through design standards compliance (LU-IP1) and considerations of emergency evacuation measures in proposed new development (Policy 1.7 and LU-IP3). It indirectly addresses emergencies through policies and measures that improve the City's resilience and protection of resources in case of a natural disaster, many of which support Safety Element efforts. Therefore, the Land Use Element does not substantially impair adopted emergency related planning.

The Safety Element addresses compliance with several emergency response and evacuation regulations and adopted plans. The policies and programs within the Safety Element encompass considerations of flooding risks, fire risks, hazardous material management, and emergency response/evacuation. Some reference specific regulations for their policies such as Policy 6.7 which requires the City adopt and implement a comprehensive hazard mitigation plan to minimize the impacts of natural and man-made disasters pursuant to the requirements of the federal Disaster Mitigation Act of 2000 and Program 6.b which additionally requires the City implements and evaluates the Plan on a regular basis as necessary to comply with federal and state laws. There is also Program 7.a which requires the City update and adopt the City of Ferndale EOP while also ensuring that City departments have coordinated Standard Operating Procedures.

The Safety Element further includes hazardous materials management policies (Program 5.a to Program 5.m) underscore a commitment to public safety and environmental protection by regulating the handling and disposal of hazardous materials thus preventing the escalation of risks from hazardous material in the event of an emergency or evacuation. The comprehensive hazard mitigation plan (Policy 6.7, Program 6.b) reflects a proactive approach to minimizing the impacts of natural and man-made disasters. These policies and programs are in line with the HMP, County EOP, Ferndale EOP, Humboldt County Integrated Waste Management Plan, and Humboldt County Hazardous Materials Area Plan.

Other policies comply with recent legislative measures, included in updates to Government Code Sections 65302, 65302.5, via Senate Bills 1241, 99, 1035, and 379, as well as Assembly Bills 747, 1409, and 2140, which collectively address various aspects of fire risk, safety, climate change adaptation, and evacuation planning within the context of city and county general plans in California. These legislative actions require identification of hazard zones lacking adequate evacuation routes, delineation of evacuation routes, and the incorporation of Local Hazard Mitigation Plans (LHMP) into a municipality's Safety Element. The Safety Element does this for future development by encouraging the development of connected neighborhoods that provide at least two exit routes that can be utilized during emergency evacuation (Policy 6.8 and Program 3.c, 6.c), coordinating with the Ferndale Volunteer Fire Protection District on emergency access requirements and specifications (Policy 7.5), and including a public safety "ingress" component to the beforementioned EOP (Program 7.l).

The Land Use Element and Safety Element are required sections of the Ferndale General Plan that build on existing regulations. They have been developed in coordination with the applicable emergency response plans including the County and City's EOP and the County's Hazard Mitigation Plan. Therefore, the Project's policies and implementation measures support and complement rather than impair adopted emergency response or emergency evacuation plans. For the above reasons, the impact of implementing the Land Use Element and Safety Element would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact WF-02: Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Finding WF-02: The Land Use Element and Safety Element policies and programs reduce the potential for exposure to wildland fires through disaster preparedness, management of urban and wildland fire hazards, development review, maintenance of water supply and hydrants, and wildland fire risk reduction programs. The degree of wildland fire hazard would not significantly change with the adoption and implementation of the Elements compared to existing conditions. The impact would be less than significant.

As shown earlier in this section in Figure 4.21-2, the Planning Area is relatively flat aside from steeply sloped hills covered with coniferous forest and understory to the south which has been identified by the CAL FIRE FHSZ Viewer as a Moderate FHSZ (CAL FIRE, 2023). There are forested slopes south of Centerville Road west of the City and south of Bluff Road east of the City. This in combination with prevailing winds from the west have the potential to spread wildfire from those areas into Ferndale. The land use element policies propose an infill strategy, avoiding densifying outlying areas of the city, and emphasizing development in infill areas, reducing the wildland urban interface and unmaintained vegetative fuels. Additionally, structures would be built to meet California Building Code and California Fire Code standards.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 • Policy LU-1.7
Land Use Element	Goal LU-2	• Policy LU-2.1 • Policy LU-2.3 • Policy LU-2.6 • Policy LU-2.7
Land Use Element	Goal LU-3	• Policy LU-3.7
Land Use Element	Goal LU-4	• Policy LU-4.3
Land Use Element	Implementation Programs	• LU-IP2 • LU-IP3
Safety Element	Goal 1	• Policy 1.1 • Policy 1.2 • Policy 1.3 • Policy 1.4
Safety Element	Goal 2	• Policy 2.4 • Policy 2.7 • Policy 2.8
Safety Element	Goal 6	• Policy 6.1
Safety Element	Implementation Programs	• Program 1.a • Program 1.b • Program 1.c • Program 6.a

The Safety Element policies and programs collectively minimize wildfire risks by addressing various factors such as slope stability, geological hazards, and vegetation management as described in the following paragraphs.

Policy 1.1 ensures that City zoning regulations incorporate seismic setbacks, structural requirements, and hillside development standards, reducing the vulnerability of structures to collapse during wildfires.

Policy 1.2 mandates geotechnical evaluations for development projects, identifying potential geological hazards like slope failures to guide mitigation measures.

Policy 1.3 requires adherence to geotechnical report recommendations in areas with identified hazards, minimizing wildfire risks associated with unstable terrain.

Policy 1.4 focuses on improving drainage, planting soil-stabilizing vegetation, and providing structural reinforcements in landslide-prone areas, reducing the likelihood of landslides exacerbating wildfire spread. Program 1.a mandates geologic investigations for projects on steep slopes, guiding measures to minimize hazards and prevent uncontrolled wildfire spread.

Program 1.b prohibits development on excessively steep hillsides, mitigating the risk of rapid wildfire spread in high-risk areas. Program 1.c implements mitigation actions for slope stability in landslide areas, including vegetation planting and landslide repair, reducing the risk of landslides triggering wildfires.

Program 4.c diverts potential development and deforestation by designating Russ Park as a natural resource area.

Policy 6.1 and Program 6.a further protect life and property through land use practices that avoid or mitigate natural hazards, including wildfires, by ensuring that mitigation measures are clearly defined, and fire safety in building construction is improved.

All of these policies and programs directly improve community's wildfire safety.

The Land Use Element further enhances these safety policies and programs with supporting land use measures and management practices. Two main ways it does this is by supporting residential and commercial infill. Policies LU-1.4, LU-2.1, LU-2.3, LU-2.6, and LU-2.7 encourage residential infill which helps concentrate development in existing neighborhoods and away from the less densely developed sloped region in the south of the Planning Area, thus reducing urban sprawl into wildfire-prone areas.

Similar to residential infill, promoting commercial infill in existing commercial areas minimizes the expansion of development into wildfire-prone regions. By maximizing the use of available public services and concentrating commercial activity in developed areas, this policy helps limit new development and reduces the need for new infrastructure and services in areas with exacerbated wildfire risks.

These infill policies are further supported by Policy LU-1.7 which promotes the use of the Planned Development (PD) zoning overlay for areas of special interest to the City located away from FHSZ and surrounded by existing development. This location could support a range of housing types and community amenities while addressing stormwater drainage and multiple points of ingress/egress during the design process of any proposed developments.

Additional supportive policies include encouraging the preservation of forest resources and sustainable forestry practices to prevent development in these areas and promote forest health which reduces the likelihood of rapid wildfire spread through densely forested areas (Policy LU-3.5 and LU-4.1) and establishing streamside protection areas along water bodies like Francis Creek helps maintain natural buffers against wildfires and preserves critical riparian habitats (Policy LU-4.2). Implementing erosion control measures and minimizing vegetative clearing within these areas further enhances their resilience to wildfire impacts. Timber management plans included in Policy LU-3.5 addresses erosion control and revegetation which can also mitigate the impacts of wildfires on soil erosion and water quality. Well-managed parks, like Russ Park in Policy LU-4.1, can serve as buffer zones and provide recreational opportunities that discourage development in wildfire-prone areas. Active management of parks and natural areas like Russ Park promotes biodiversity and stable soils, which can contribute to natural fire resilience.

The majority of the City and Planning Area is relatively flat and proposed land uses and policies encourage infill development reducing the wildland urban interface. Additionally, structures would be built to meet California Building Code and California Fire Code standards. The proposed policies and programs would also reduce the potential for exposure to wildland fires through disaster preparedness, management of urban and wildland fire hazards, development review, maintenance of water supply and hydrants, and wildland fire risk reduction programs.

In combination with the beforementioned policies in the Safety Element, the Land Use Element's support of wildfire risk reduction efforts by promoting smart growth strategies, preserving natural resources, and enhancing ecosystem resilience, thereby reducing the potential for wildfire ignition and spread in vulnerable areas and reducing anticipated impacts of Project implementation to less than significant levels. The degree of wildland fire

hazard would not significantly change with the adoption and implementation of the Elements compared to existing conditions and the proposed policies would not exacerbate wildfire risk. The impact would be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact WF-03: Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Finding WF-03: The Land Use Element and Safety Element Updates would not result in development that would require installation or maintenance of infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. A less than significant impact would occur.

As the two Element updates are part of the greater General Plan and not construction projects, their implementation would not directly result in installation or maintenance of associated infrastructure but would rather facilitate infrastructure meeting the needs of new proposed developments or for adherence to regulations.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4-1.10
Land Use Element	Goal LU-2	• Policy LU-2.1 • Policy LU-2.3 • Policy LU-2.4 • Policy LU-2.6-2.8
Land Use Element	Goal LU-3	• Policy LU-3.2
Land Use Element	Implementation Programs	• LU-IP2 • LU-IP3
Safety Element	Goal 1	• Policy 1.2 • Policy 1.3 • Policy 1.4
Safety Element	Goal 2	• Policy 2.4 • Policy 2.7 • Policy 2.8
Safety Element	Goal 3	• Policy 3.1 • Policy 3.2 • Policy 3.8
Safety Element	Goal 6	• Policy 6.1

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Implementation Programs	• Program 1.-e • Program 2.a-n • Program 5.d • Program 6.a

The Land Use Element outlines various goals, policies, and implementation programs aimed at accommodating future housing, employment development, and other community needs while focusing on improved public health, reduced infrastructure costs, enhanced local economies, and addressing long-term environmental issues including climate change and natural resources management (Policies 1.4-10).

The implementation of the proposed goals and policies may require the installation or maintenance of associated infrastructure such as roads, power lines, or other utilities. However, any new infrastructure would require the design and construction to be approved by the City and applicable regulations. Existing regulations (such as Fire Code and Fire Safe Regulations) and community design standards would guide the construction of these projects. Additionally, Land Use and Safety Element policies would direct construction of new infrastructure away from areas of higher fire risk.

Furthermore, Safety Element policies and programs are designed to reduce risks and reduce environmental impacts through a comprehensive approach to geotechnical evaluation, development conformance, vegetation planting, structural reinforcements, fire protection coordination, and specific program implementations to maintain infrastructure and improve its resilience to disasters. It includes geotechnical evaluations for developments in geologically sensitive areas (Policies 1.2 & 1.3) and improvements in landslide-prone areas (Policy 1.4) to minimize the risk of environmental damage from slope failures, soil subsidence, and landslides through enhanced drainage, vegetation planting, and structural reinforcements. Fire protection coordination (Policies 3.1 to 3.4) with the Ferndale Volunteer Fire District ensures adequate fire safety measures, reducing both property and environmental risks.

The review of critical and emergency structures along with long-term programs for upgrading or relocating vulnerable facilities (Program 1.e) for earthquake vulnerabilities and the annual testing of fire hydrants (Program 3.a) for maintenance and performance assessment further safeguard against potential environmental impacts. Additionally, flood zone mapping (Program 2.a), in collaboration with FEMA, aids in flood risk management of infrastructure and protects the environment from flood damage. The proposed policies would not result in new roadways or utility extensions into undeveloped areas which would pose additional or increased wildfire risk. Due to the considerations to infrastructure maintenance and installation design highlighted in both the Land Use Element and Safety Element's policies and programs, the anticipated environmental impact, temporary and ongoing, from the installation or maintenance of associated infrastructure is anticipated to be less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Impact WF-04: Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Finding WF-04: The Land Use Element and Safety Element encourages development in flatter, infill areas and would not promote increased development in hillside areas beyond existing conditions. The proposed policies would not increase the risk above existing conditions or expose people or structures to significant risks as a result of runoff, post-fire instability, or drainage changes. A less than significant impact would occur.

There are existing conditions within the Planning Area that pose a potential risk to people and structures in regard to flooding and soil instability. These have been identified as the steeply sloped southern region of the Planning Area as well as the floodplain and creek systems located throughout the Planning Area. The policies and implementation measures outlined in the Land Use Element and Safety Element are aimed at addressing risks to people and structures with increased development or population growth due to downslope or downstream flooding/landslides resulting from runoff, post-fire slope instability, or drainage changes.

Applicable proposed goals and policies are as follows:

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Land Use Element	Goal LU-1	• Policy LU-1.4 • Policy LU-1.7
Land Use Element	Goal LU-2	• Policy LU-2.1
Land Use Element	Goal LU-3	• Policy LU-3.2 • Policy LU-3.3 • Policy LU-3.4 • Policy LU-3.7
Land Use Element	Goal LU-4	• Policy LU-4.2
Land Use Element	Implementation Programs	• LU-IP4 • LU-IP5 • LU-IP6
Safety Element	Goal 1	• Policy 1.1 • Policy 1.2 • Policy 1.3 • Policy 1.4 • Policy 1.5
Safety Element	Goal 2	• Policy 2.3 • Policy 2.4 • Policy 2.6 • Policy 2.7 • Policy 2.8 • Policy 2.9
Safety Element	Goal 6	• Policy 6.1

General Plan Element	Applicable Goals	Applicable Proposed Policies and Programs
Safety Element	Implementation Programs	• Program 1.a • Program 1.b • Program 1.c • Program 1.d • Program 1.g • Program 2.a-2.f • Program 2.j • Program 2.o • Program 6.a

Within the Land Use Element Ferndale maximizes the utilization of existing land resources, by implementing strategies such as residential infill, planned developments, and promoting commercial activities, effectively reducing the risk of downstream flooding and landslides. Policy LU-1.4 supports this by encouraging residential infill which helps utilize already developed areas, reducing pressure on undeveloped land, potentially lowering the risk of landslide or downstream flooding impacts. Policy LU-1.7 also does this by identifying potential space for planned developments that can address stormwater drainage and provide multiple points of ingress/egress, ensuring that water flow and access are managed effectively, reducing flood risk. Similar to residential infill, Policy LU-2.1 promotes commercial infill in existing areas reduces disturbance to natural landscapes and minimizes the risk of downstream flooding or landslides.

Policies LU-3.2-3.4 and LU-4.2 directly address flood risks. Policy LU-3.2 incorporates drainage improvements and low-impact development techniques to help manage stormwater runoff, reducing the likelihood of downstream flooding and erosion.

Policy LU-3.3 manages flood plains by encouraging development outside the 100-year floodplain and ensuring compliance with elevation requirements and drainage ordinances helps mitigate flood risks to structures and people. Specifically for the Francis Creek Corridor, Policy LU-3.4 and 4.2 aims to maintain or improve riparian corridors to help manage water flow, prevent flooding, and preserve natural habitats, reducing downstream flooding and erosion impacts. Policy LU-4.1 also identifies active management of Russ Park as a method to maintain stable soils and reduces erosion and landslide risks in a major local recreational area. Land Use Implementation Plans 4-6 implement these policies. LU-IP4 & LU-IP5 seek funding for drainage projects and regularly updates drainage plans to help improve stormwater management, reducing flood risks. LU-IP6 creates stream set back standards by establishing stream setback requirements to protect waterways and reduce the risk of erosion and downstream flooding.

The Safety Element addresses potential risks and hazards as well through the integration of drainage improvements, riparian corridor maintenance, stream setback standards, geotechnical evaluations, and floodplain management efforts collectively work to manage stormwater runoff, reduce erosion, preserve natural habitats, ensure structural safety, and enhance preparedness and response capabilities, minimizing harm during flood events while fostering sustainable development. Policy 1.1 focuses on updating regulations for seismic setbacks and hillside development standards helps ensure structures are built to withstand seismic events and minimize landslide risks.

Policies 1.2, 1.3, 1.5 & Program 1.a addresses potential geotechnical hazards by requiring geotechnical evaluations for development projects in hazard-prone areas helps identify and mitigate landslide and slope instability risks.

Policy 1.4 & Program 1.c improve drainage and slope stability by stabilizing soil with vegetation, and implementing structural reinforcements in landslide-prone areas help mitigate landslide and downstream flooding risks.

Policy 2.3 & Policy 2.6 promotes flood risk assessment and informing citizens about them to aid in preparedness and response, potentially reducing harm from flooding events. Policy 2.7 & Policy 2.8 minimizes development in flood-prone areas by requiring developments to minimize flooding hazards and balance natural features to reduce the risk of downstream flooding and erosion. Policy 2.9 employs flood control methods consistent with regional policies and best practices to ensure effective flood management while minimizing environmental impacts.

Goal 2 Implementation Programs collectively aim to implement policies that mitigate risks of flooding by identifying funding for flood zone mapping, implementing hazard mitigation plans, coordinating with FEMA and other agencies, ensuring regulatory compliance, standardizing mitigation requirements, evaluating land use compatibility, maintaining storm drains, constructing levees, performing maintenance on waterways, providing evacuation procedures, upgrading storm drainage systems, elevating structures above floodplain levels, conducting drainage studies, and complying with water quality control permit requirements (Programs 2.a-2.j and Program 2.o).

Implementation Program 6.a brings all of the previous policies and programs together by aiming to consistently review and enhance regulations to clarify mitigation measures, establish geotechnical and geologic investigation criteria for identifying and addressing hazards, implement procedures for reviewing development-related reports, enhance building fire safety standards, and define and balance the benefits of defensible space with the City's conservation objectives.

The Land Use Element and Safety Element policies and implementation measures comprehensively address risks associated with downstream flooding, landslides, and other hazards in Ferndale. By prioritizing resilience in land use planning and infrastructure development, Ferndale is proactively safeguarding its residents and structures against the impacts of natural hazards, promoting sustainable growth, and preserving the integrity of its environment. For this and the beforementioned reasons, the anticipated impacts of Project implementation are less than significant.

MITIGATION MEASURE

No mitigation measures would be required.

Bibliography

Board of Forestry. (2023). *State Responsibility Area (SRA) Viewer*. Retrieved from Cal Fire: https://calfire-forestry.maps.arcgis.com/apps/webappviewer

CAL FIRE. (2023). *FHSZ Viewer*. Retrieved from CAL FIRE: https://egis.fire.ca.gov/FHSZ/

CalFire. (2022, May 20). *Strategic Fire Plan Humboldt-Del Norte Unit 2022.* Retrieved from Office of the State Fire Marshal: https://osfm.fire.ca.gov/media/qcxfna3h/2022-humboldt-del-norte-unit-fire-plan.pdf

City of Ferndale. (2022, 12 01). *City of Ferndale Emergency Response Handbook.* Retrieved from City of Ferndale: https://ci.ferndale.ca.us/wp/wp-content/uploads/Emergency-Response-Handbook-for-website.pdf

Fire Chief's Association of Humboldt County. (2023, April). *Humboldt County Fire Chiefs Association Report 2021.* Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/117366/2021-HCFCA-Annual-Report

FRAP. (2022, November 21). *Humboldt County State Responsibility Area Fire Hazard Severity Zones*. Retrieved from Office of the State Fire Marshal: https://osfm.fire.ca.gov/-/media/OSFM%20Website/What%20We%20Do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-map-2022/fire-hazard-severity-zones-maps-2022-Files/fhsz_county_sra_e_2022_humboldt_ada

Humboldt County. (2019). *Eel Planning Unit Action Plan*. Retrieved from Humboldt County: https://humboldtgov.org/DocumentCenter/View/71005/410-Eel-Planning-Unit-Action-Plan_Final_Revised-12719

Humboldt County Fire Safe Council. (2019). *Humboldt County Community Wildfire Protection Plan*. Retrieved from Humboldt County: https://humboldtgov.org/2431/Community-Wildfire-Protection-Plan

Humboldt LAFCO. (2018). *City of Ferndale Municipal Service Review.* Humboldt LAFCO.

Javid, N. (2021, July 12). *Guy Fieri visits Ferndale's all-new CERT team*. Retrieved from KCRTV: https://krcrtv.com/north-coast-news/eureka-local-news/guy-fieri-visits-ferndales-all-new-cert-team

KIEM. (2021, July 11). *The Humboldt CERT Coaltion forms a team in Ferndale*. Retrieved from Redwood News: https://kiem-tv.com/2021/07/11/the-humboldt-cert-coaltion-forms-a-team-in-ferndale/

National Wildfire Coordinating Group. (n.d.). *Module 2: Principles of Wildland Fire Behavior*. Retrieved from National Wildfire Coordinating Group Training: https://training.nwcg.gov/classes/S190/508Files/071231_s190_m2_508.pdf

Weather Spark. (2023). *Climate and Average Weather Year Round in Ferndale*. Retrieved from Weather Spark: https://weatherspark.com/y/315/Average-Weather-in-Ferndale-California-United-States-Year-Round

5.0 ALTERNATIVES TO THE PROJECT

5.1 PURPOSE AND METHODOLOGY

The purpose of an alternatives analysis in an EIR, per §15126.6(a) of the State CEQA Guidelines, is to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." In addition, the State CEQA Guidelines specifies that "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly" (Guidelines §15126.6(b)).

5.2 DEVELOPMENT OF THE ALTERNATIVES

CEQA requires that all EIRs discuss a "no project" alternative. The alternatives to the proposed Project describe other ways the Project could be implemented that could feasibly attain most of the objectives of the Project and reduce its environmental impacts. The feasibility of an alternative may be determined based on a variety of factors, including but not limited to economic viability, availability of infrastructure, and other plans or regulatory limitations (Guidelines §15126.6(f)(1)). As discussed in Section 3, Project Description, the objectives of the Land Use Element and Safety Element Updates are as follows:

- Satisfy new State mandates for General Plans that have been issued since the General Plan was last updated.
- Encourage infill development to preserve agricultural lands and open space around the City.
- Establish a stream protection zone along Francis Creek to maintain its riparian habitat values and prevent soil erosion.
- Adjust to climate change and promote sustainability.
- Resolve inconsistencies between existing land uses and the General Plan.
- Resolve inconsistencies between the General Plan and other City plans that have been revised in recent years.
- Targeted increases in land use density and increases in the allowable uses and development standards to provide adequate housing sites, promote fair and equal housing opportunities, and resolve inconsistencies with the City's adopted 2019 Housing Element.
- Remove governmental constraints to housing investment.

This analysis presents two alternatives to the Project, including the CEQA-required "No Project" Alternative, that may reduce its environmental impacts. These alternatives have been developed to provide a reasonable range of options that would help decision-makers and the public understand the environmental impacts of revising or eliminating certain components of the Project.

The alternatives discussion focuses on the Land Use Element Update because as documented in the analysis of environmental impacts, the Safety Element Update has almost no potential for causing adverse environmental impacts. The only exception is Implementation Program 2.j which calls for performing preventative maintenance to maintain the flow capacity of Francis Creek. With the implementation of proposed mitigation measure BIO-1, which requires consultation with the California Department of Fish and Wildlife prior to and during the preventative maintenance of Francis Creek, all the impacts of the Safety Element Update are reduced to less than significant levels. As a result, the Safety Element Update is not further discussed in this alternatives chapter.

The following paragraphs summarize the alternatives evaluated in this EIR:

Alternative 1: Reduced Housing Density – An alternative to planning for concentrated higher density development in infill areas is to plan for reduced density development throughout the City. Under this Alternative, the Project's proposed changes to the Land Use Map would be implemented, however the proposed residential density increases would not occur. For example, the existing General Plan R2 designation allows up to 14 dwelling units per acre (du/ac) and the proposed Project would allow a density of up to 18 du/ac; similarly the existing R1 designation allows up to 7 du/ac and the proposed Project would allow up to 9 du/ac; and the existing R3 designation allows up to 14 du/ac and the proposed Project would allow up to 18 du/acre. Both the proposed Project and Alternative 1 would apply new and/or existing General Plan Land Use to lands within the city.

Alternative 2: No Project – This Alternative considers the environmental impacts that would occur if the Land Use and Safety Element updates were not adopted, instead the City would continue to operate under its current General Plan. Current land use and zoning designations would remain unchanged under and buildout of those designations and compliance with applicable City regulations would be assumed to occur. This Alternative would not update the General Plan, therefore the City would lack an updated long-term guide for development throughout the City.

5.3 ALTERNATIVE 1: REDUCED HOUSING DENSITY

The Reduced Housing Density Alternative (Alternative 1) would implement the proposed land use map changes, however the proposed density increases for each residential land use designation would not change, thus resulting in a lower development potential for new housing than the proposed Project. For example, this Alternative would apply the proposed Land Use Map change #4 discussed in Chapter 3[1] (Assessor's Parcel Number (APN) 030-091-030) where the Land Use designation is proposed to go from R-1 Residential Low Density to R-2 Residential Medium Density on 8.6 acres of a 15.5 acre parcel. However, the R1 and R2 allowable density would not increase as proposed by the Project. Therefore, Alternative 1 would reduce the residential development potential on that property compared to the proposed Project. Non-residential development would be the same as the proposed Project.

Like the Project, the Reduced Housing Density Alternative would also discontinue the R-S Residential Suburban land use designation. All the properties that currently have an R-S designation would be given a R-1 Residential Low Density designation (Land Use Map changes #1 and #12). The R-1 designation allows the same uses as R-S but changes the overall density from 1 du/ac to 9 du/ac and the minimum lot size will be reduced from 1 ac to 6,000 sq. ft. This Alternative would reduce opportunities for developing new housing for all income levels compared to the proposed Project. Resulting residential density would be less than the proposed Project and more than the No Project Alternative. However, Alternative 1 would not accomplish Project objectives to the extent that the proposed Project would, as Alternative 1 would provide reduced housing options.

Impact Analysis

AESTHETICS

Development under the Reduced Housing Density Alternative would have a more dispersed land use pattern than the Project because new housing would be primarily single-family homes developed at lower residential densities. There is likely to be less vacant land in the City under Alternative 1 because more land would be required to accommodate future housing needs. Impacts are less than significant for scenic vistas under this Alternative because lower density development continues the existing development pattern. As with the Project, the Reduced Housing Density Alternative has less than significant impacts on scenic resources visible from a state scenic

[1] Table 3-4, Page 16

highway, on scenic quality, and on the effect of light and glare on views in the area. This is because it would continue established land uses. Also under this Alternative, the City would adhere to existing ordinances that regulate light and glare for new development and to City design guidelines, City code, and the proposed goals included in the Land Use and Safety elements that seek to maintain the visual quality of the City.

AGRICULTURAL AND FORESTRY RESOURCES

Similar to the Project, impacts to prime agricultural land as defined by the California Resources Agency's Farmland Mapping and Monitoring Program and timberlands or Timberland Production zones under the Reduced Housing Density Alternative would be less than significant because such lands are not present in the Planning Area. Impacts to forestland zoning and conversion of forestland to non-forest use would also be less than significant because there are no planned changes to alter forestland zoning. The Land Use and Safety elements include several policies and programs that promote the conservation and maintenance of forest lands to protect these natural resources. These would apply under Alternative 1 the same as under the Project, therefore the impact to agriculture and forestry resources would be less than significant.

AIR QUALITY

Similar to the Project, new development allowed by the Reduced Housing Density Alternative is expected to increase emission of pollutants. Both Alternative 1 and the Project include policies to reduce air quality impacts; however, any increase in particulate matter (PM_{10}) emissions could contribute to the County's exceedance of PM_{10} emissions standards and could be considered a "cumulatively considerable net increase".

Implementation of policies such as incentivizing the replacement of existing inefficient woodstoves and fireplaces with high-efficiency woodstoves, transition of City motor vehicle fleets to electric vehicles, supporting the development of local electric vehicle charging stations, and employing best management practices to reduce fugitive dust emissions from construction would result in PM_{10} emissions reductions. However, it is unlikely that the scale of these emission reduction measures would mitigate new PM_{10} emissions to a level that would not contribute to the County's exceedance of the California 24-hour PM_{10} standard. Under both the Project and Alternative 1, air quality impacts are therefore considered significant and unavoidable. Mitigation measures are proposed to reduce the potential impacts on air quality (AQ-01, AQ-02, and AQ-03) including the adoption of the Ferndale General Plan Draft Air Quality Element, however no feasible mitigation measures have been identified that would be reasonably expected to result in reducing PM_{10} levels below levels that would not violate applicable standards, or not be cumulatively considerable net increase in PM_{10} emissions. Air Quality impacts would be significant and unavoidable under both the Reduced Housing Density Alternative and the Project.

BIOLOGICAL RESOURCES

Both the Project and the Reduced Housing Density Alternative may potentially impact special status species or their habitat, including riparian habitat and wildlife corridors. The Reduced Housing Density Alternative would have similar direct impacts on wetlands compared to the Project because similar types of development would be allowed.

Alternative 1 would result in overall reduced development when compared to the proposed Project; however, development under Alternative 1 may potentially impact special-status species or their habitat, including riparian habitat. Mitigation Measures BIO-1 and BIO-2 would be implemented for Alternative 1 and would help reduce associated biological resource impacts, similar to the proposed Project. Overall, impacts to biological resources under Alternative 1 would be less than significant with mitigation incorporated, like the proposed Project. Impacts from Alternative 1 would be slightly less, compared to the proposed Project due to the reduction in buildout.

CULTURAL RESOURCES

The Reduced Housing Density Alternative, like the Project, would have the potential to impact historic and archaeological resources through the development of individual parcels. However, under both Alternative 1 and the Project, development is encouraged to occur in already developed infill areas which may help prevent disturbance to archaeological resources. Also, new development is subject to local regulations and policies regarding cultural resource preservation. Both Alternative 1 and the Project's impacts on cultural resources are therefore considered less than significant; there is no distinguishable difference between the two alternatives with this impact category.

ENERGY

Development under the Reduced Housing Density Alternative could have a more dispersed land use pattern than the Project because new housing would be primarily single-family homes developed at lower residential densities. This is expected to lead to a development pattern that consumes more electrical, propane and transportation fuel (largely gasoline and diesel) because as noted in Section 5.7 Energy Resources, housing type is a very significant determinant of energy consumption and detached single-family homes generally use more energy than multifamily homes.

Aside from the difference in overall energy use, there is not anticipated to be any other differences in energy use between the Project and Alternative 1. They will both be similar in reducing wasteful, inefficient and unnecessary energy consumption because they will both implement the same building codes that require new development to include energy efficient design, materials and equipment. Although energy use could be slightly greater, the impact would remain less than significant.

GEOLOGY AND SOILS

There is likely little difference in the potential impacts on geology and soils between the proposed Project and the Reduced Housing Density Alternative. The Project would implement the policies of programs of the Safety Element Update that protect new development from geologic and soil hazards, such as Policy 1.2 requiring geotechnical evaluation for development projects with the potential for geological hazards, such as slope failures or soil subsidence. The Reduced Housing Density Alternative would implement the Draft Safety Element Update in the same way as the Project, so impacts on geology and soils are considered less than significant under both the Project and Alternative 1.

GREENHOUSE GAS EMISSIONS

Development under the Reduced Housing Density Alternative would have a more dispersed land use pattern than the Project because new housing would be primarily single-family homes developed at lower residential densities. This is expected to lead to a development pattern that consumes more electrical, propane and transportation fuel (largely gasoline and diesel) which will increase GHG emissions. Single-family homes use more energy and therefore result in higher GHG emissions than multifamily homes.

Aside from the difference in GHG emissions from electrical, propane and transportation fuel use, there is not anticipated to be any other differences in GHG emissions between the Project and Alternative 1. They will both implement the same building codes that require new development to include energy efficient design, materials and equipment which will reduce energy use and GHG emissions. However, the impacts would remain significant and unavoidable.

HAZARDS AND HAZARDOUS MATERIALS

Development associated with the proposed Project and the Reduced Housing Density Alternative could result in impacts related to the release of hazardous materials into the environment or allow development that could emit hazardous emissions. There is very little difference between the two alternatives for impacts associated with

hazards and hazardous materials. Both options would rely upon the policies of the Safety Element Update's programs, thereby enhancing safety measures and preventing conditions that would lead to the release of hazardous materials. Both options would be in alignment with local, state, and federal regulations, devising strategies to prevent and mitigate harm from such incidents. Potential hazards and hazardous materials impacts would be similar and less than significant for both the Project and the Reduced Housing Density Alternative.

HYDROLOGY AND WATER QUALITY

Both the Reduced Housing Density Alternative and the proposed Project include policies encouraging infill development and other programs to reduce potential impacts of new development on hydrology and water quality. Alternative 1 would result in overall reduced development when compared to the proposed Project. Impacts from Alternative 2 would be slightly less compared to the proposed Project due to the reduction in buildout. Impacts associated with both alternatives would be less than significant.

LAND USE AND PLANNING

The Reduced Housing Density Alternative would not increase residential densities so it will not result in as much housing diversity as the proposed Project. As a result, the Reduced Housing Density Alternative may prompt higher density multifamily housing development in other areas outside the City to accommodate population and economic growth, particularly for households earning moderate or lower incomes. With fewer affordable housing opportunities for persons working in Ferndale earning close to the minimum wage, an increasing share of Ferndale's workforce will likely need to commute from areas outside the City. Both the proposed Project and the Reduced Housing Density Alternative implement state laws that protect the environment and are consistent with regional plans protecting the environment. Neither alternative result in any conflicts with any plans, policies or regulations protecting the environment, so this impact is considered less than significant under both the proposed Project and the Reduced Housing Density Alternative.

MINERAL RESOURCES

Like the proposed Project, the Reduced Housing Density Alternative does not have land uses or policies that would result in the loss of availability of a known mineral resource, or a locally important mineral resource recovery site delineated on a local general plan. There is no impact under both alternatives.

NOISE

Development resulting from the Reduced Housing Density Alternative and from the proposed Project will be subject to site-specific design plans and City ordinances pertaining to ground borne vibrations and noises. Any development outside of City limits as a result of this Alternative would be subject to County ordinances on the topic of noise. Noise related impacts associated with both options would be less than significant.

POPULATION AND HOUSING

The Reduced Housing Density Alternative would not increase residential densities so it will not result in as much housing diversity as the proposed Project. Accordingly, the Reduced Housing Density Alternative may prompt higher density multifamily housing development in other areas in order to accommodate population and economic growth, particularly for households earning moderate or lower incomes. With fewer affordable housing opportunities for persons working in Ferndale earning close to the minimum wage, an increasing share of Ferndale's workforce will likely need to commute from areas outside the City. This has some of the same impacts on those workers as unplanned population growth because those workers are forced to commute longer distances to their jobs. The Reduced Housing Density Alternative will have similar impacts on population and housing than the proposed Project. However, under both alternatives the population and housing impacts would be less than significant.

PUBLIC SERVICES

Development under the Reduced Housing Density Alternative and the proposed Project would accommodate population growth, which would result in an increase in demand for schools, parks, libraries, recreational facilities, first responders, and other public services. The discussion in Section 4.16 explains how population growth will not result in an increase in service needs to the point where new facilities are required. Impacts of public services would be less than significant under both options and there is no discernable difference in public services impacts between the two alternatives.

RECREATION

Population growth that would occur under the proposed Project and Reduced Housing Density Alternative would result in an increase in housing growth which would increase the use of existing parks and recreational facilities. Both options would bring about orderly planned growth and improvement to recreational facilities to address this demand increase. Impacts related to recreation and parks facilities would be the same for the Reduced Housing Density Alternative and the proposed Project, which would be less than significant.

TRANSPORTATION AND CIRCULATION

The City will remain relatively compact with existing development and new growth concentrated in an area of a little more than one square mile, as a result, population and employment growth in this area would be expected to generate VMT per capita at rates similar to baseline conditions. Even lower rates are possible due to the policies in both alternatives that support infill and improved active transportation conditions.

The Reduced Housing Density Alternative would not increase residential densities so it will result in a less compact development pattern which may slightly increase VMT compared to the Project because residents would have to travel a bit further from their homes to destinations for work and services. However, the differences in VMT between the two alternatives is expected to be small and this impact would remain significant and unavoidable under both alternatives.

Neither the Reduced Housing Density Alternative nor the proposed Project propose transportation network modifications that would disrupt existing or interfere with planned bicycle, pedestrian or transit service facilities, nor would they cause an inconsistency with applicable design standards. There are no anticipated differences between the two alternatives in this impact category.

TRIBAL CULTURAL RESOURCES

Development under the Reduced Housing Density Alternative and the proposed Project would be subject to the same City code and applicable regulations to mitigate and reduce potential impacts to tribal cultural resources. New development under both alternatives would occur in both previously developed or disturbed areas and undeveloped areas. Impacts related to tribal cultural resources would be similar and less than significant under both alternatives.

UTILITIES AND SERVICE SYSTEMS

Development under the Reduced Housing Density Alternative and the proposed Project would accommodate population growth, which would result in an increase in demand for water, wastewater treatment, stormwater drainage, electric power, natural gas, telecommunications facilities, and solid waste disposal. The discussion in Section 4.20 explains how population growth will not result in an increase in service needs to the point where new facilities are required. Impacts on utilities and services would be less than significant under both options and there is no discernable difference in the utility and services impacts between the two alternatives.

WILDFIRE

There is likely little difference in the potential impacts on wildfire between the proposed Project and the Reduced Housing Density Alternative. The Project would implement the policies of programs of the Safety Element Update that protect new development from wildfire hazards, such as Program 3.c which mandates access for emergency vehicles in all development projects, ensuring that new developments consider emergency ingress and egress. The Reduced Housing Density Alternative would implement the Draft Safety Element Update in the same way as the Project, so impacts on wildfire are considered less than significant under both the Project and Alternative 1.

5.4 ALTERNATIVE 2: NO PROJECT

CEQA requires that the alternatives discussion include an analysis of a "No Project" Alternative. Pursuant to CEQA Guidelines (Section 15126.6[e][2]), the No Project Alternative, or Alternative 2, refers to the analysis of existing conditions and what would reasonably be expected to occur in the foreseeable future if the Project were not approved, based on current plans and consistent with available infrastructure and community services. The No Project Alternative typically will proceed along one of two lines: (1) when a project is a revision of an existing regulatory plan or policy, the No Project Alternative will be continuation of the existing plan or policy; or (2) if a project is a development project on identifiable property, the No Project Alternative is the circumstance under which the project does not proceed. In this case, the No Project Alternative represents the continuation of existing General Plan Land Use Designations, Land Use Element and Safety Element Policy within the City, and the population growth expected to be accommodated under those existing designations is assumed to occur under this alternative.

The No Project Alternative assumes there is no change in General Plan Land Use Designations or Land Use Element or Safety Element Policy. The No Project Alternative would still accommodate growth within existing City Land Use Designations because there are sufficient vacant properties with public services available zoned to accommodate the new housing needed.

However, the No Project Alternative would not accomplish the Project objective to provide housing options for all income levels because the new housing developed would be low density single-family homes that are only likely to be affordable to above moderate income households. Also, the General Plan would not include proposed Land Use Element policies relating to infill development, the preservation and enhancement of historical character, the protection of natural resources, and the Safety Element would not include policies for hazard mitigation and sustainability. As a result, the No Project Alternative would result in a more dispersed development pattern than the Project and more population growth would need to be accommodated within the unincorporated area surrounding the City within the Planning Area at significantly lower densities and using on-site water and wastewater services. And without the policies in the Safety Element Update being implemented, Ferndale's population would be more at risk from natural and man-made hazards under the No Project Alternative compared to the Project.

AESTHETICS

Development under the No Project Alternative would continue the land use pattern that currently exists in the City of Ferndale. Impacts to scenic vistas and visual quality would be similar under this Alternative and the proposed Project even though development could be prompted to occur in the unincorporated areas outside of the City which would be subject to County policies instead of the design guidelines that apply to development within the City. Impacts to light and glare would be the same for both projects as the City and County have similar standards set forth in their light and glare ordinances and policies. Impacts under the No Project Alternative would be similar to the proposed Project and would be less than significant impact.

AGRICULTURAL AND FORESTRY RESOURCES

Impacts to prime agricultural land as defined by the California Resources Agency's Farmland Mapping and Monitoring Program and timberlands or Timberland Production zones under the No Project Alternative would be the same as the proposed Project because such lands are not present in the Planning Area. The No Project Alternative would not include the several policies and programs that promote the conservation and maintenance of forest lands that are present in the Land Use and Safety Element Updates.

As described in Table 5-1 above, the Project modifies Land Use Map change #8 which proposes redesignating five parcels zoned A-E Agriculture Exclusive to R-1 Residential Low Density. The No Project Alternative would not make this change to the Land Use Map, so it could be argued to have slightly fewer impacts on zoning for agricultural uses than the Project.

However, the No Project Alternative also removes other land use changes that would encourage development of higher housing densities to accommodate the housing needs of Ferndale's expanding moderate- and lower-income workforce, so more future employees will likely have to find housing outside of the City and commute into the City for work. Regionally there is a shortage of land available for new workforce housing, and to address that shortage other jurisdictions may need to redesignate areas currently zoned for agricultural use to allow higher density residential uses, so this alternative may cause the similar impacts on agricultural zoning in other areas outside of the City.

AIR QUALITY

New development allowed by the No Project Alternative, like the proposed Project, may emit criteria pollutants, but would be required to comply with the NCUAQMD's Attainment Plan (1995) and Rules and Regulations and would be expected to be consistent with reducing PM_{10} emissions. Any increase in PM_{10} emissions is considered significant as the County is in non-attainment with the California 24-hour PM_{10} emissions standard. The proposed Project has several policies and programs that supplement the NCUAQMD's Attainment Plan and aim to reduce PM_{10} emissions. The No Project Alternative would not adopt and implement the mitigation measures proposed in this EIR, therefore air quality impacts would be greater than the proposed Project. The impact would remain significant and unavoidable.

BIOLOGICAL RESOURCES

The No Project Alternative may cause similar impacts as the Project on biological resources in the City. Both the proposed Project and the No Project Alternative may potentially impact special status species or their habitat, including riparian habitat and wildlife corridors. The No Project Alternative would not implement proposed Policy 4.2 - Francis Creek Riparian Habitat Enhancement and Erosion Control which improves upon the existing General Plan biological resource protections by limiting the types of new development that could occur within buffers along Francis Creek. As a result of existing federal and state regulations protecting natural resources (such as wildlife habitat), and existing and proposed policies it is unlikely that implementation of this alternative would have a substantial adverse impact directly or indirectly on a special-status species. However, the No Project Alternative would not implement mitigation measures BIO-1 and BIO-2 to reduce biological resource impacts. Based on the above discussion, the No Project Alternative will have greater impacts on biological resources compared to the Project due to the less robust biological resource protection policies in the existing General Plan.

CULTURAL RESOURCES

The No Project Alternative, like the Project, would have the potential to impact historic and archaeological resources through the development of individual parcels. However, under both the No Project Alternative and the Project, development is encouraged to occur in already developed infill areas which may help prevent disturbance to archaeological resources. Also, new development is subject to local regulations and policies regarding cultural

resource preservation. Both the No Project Alternative and the Project's impacts on cultural resources are therefore considered less than significant; there is no distinguishable difference between the two alternatives with this impact category.

ENERGY

Development under the No Project Alternative would have a more dispersed land use pattern than the Project because new housing would be primarily single-family homes developed at lower residential densities. This is expected to lead to a development pattern that consumes more electrical, propane and transportation fuel (largely gasoline and diesel) because as noted in Section 5.7 Energy Resources, housing type is a very significant determinant of energy consumption and detached single-family homes generally use more energy than multifamily homes.

Also, the No Project Alternative may be less effective than the Project in reducing wasteful, inefficient, and unnecessary energy consumption because it does not include a program to implement building codes that require new development to include energy efficient design, materials and equipment. Accordingly, the No Project Alternative would have greater impacts on energy resources compared to the Project.

GEOLOGY AND SOILS

Potential geology and soils impacts would be greater under the No Project Alternative because it would not implement the policies of programs of the Draft Safety Element including Policy 1.1-1.5, 6.1 and Program 1.a-d, 1.g, 6.a which include updating zoning regulations, requiring geotechnical evaluations for development projects, ensuring adherence to mitigation measures in hazardous areas, improving drainage and soil stabilization, collecting and maintaining geologic data, and ensuring structural integrity of public facilities. There is a long list of hazard mitigation measures in the Safety Element that would not be implemented under the No Project Alternative. Therefore, geology and soils impacts of the No Project Alternative would be greater than the Project.

GREENHOUSE GAS EMISSIONS

Development under the No Project Alternative would have a more dispersed land use pattern than the Project because new housing would be primarily single-family homes developed at lower residential densities. This is expected to lead to a development pattern that consumes more electrical, propane and transportation fuel (largely gasoline and diesel) thereby generating more GHG emissions because as noted in Section 5.7 Energy Resources, housing type is a very significant determinant of energy consumption and detached single-family homes generally use more energy than multifamily homes.

Also, the No Project Alternative may be less effective than the Project in reducing wasteful, inefficient and unnecessary energy consumption because it does not include a program to implement building codes that require new development to include energy efficient design, materials and equipment. And since energy consumption results in GHG emissions, the No Project Alternative would have greater impacts on GHG emissions compared to the Project. Additionally, the No Project Alternative would not adopt and implement the mitigation measures proposed in this Draft PEIR. The impact would remain significant and unavoidable.

HAZARDS AND HAZARDOUS MATERIALS

Development associated with the proposed Project and the No Project Alternative could result in impacts related to the release of hazardous materials into the environment or allow development that could emit hazardous emissions. The proposed Project would implement the Draft Safety Element's policies and programs, thereby enhancing safety measures and preventing conditions that would lead to the release of hazardous materials. The No Project Alternative would rely upon the policies of the antiquated Ferndale Safety Element (1975), which are far less effective and comprehensive than those in the proposed Project, so potential hazard and hazardous materials impacts would be slightly greater under the No Project Alternative.

HYDROLOGY AND WATER QUALITY

The No Project Alternative would have similar hydrology and water quality impacts as the proposed Project. Future projects would be required to comply with federal, state, and local regulations, such as the National Pollutant Discharge Elimination System and Stormwater Pollution Prevention Plan. The Safety element contains policies to reduce impacts related to flooding to a less than significant level. Both the No Project Alternative or the Project would be expected to have relatively little effect on the quantity or quality of groundwater availability in the Eel River Basin and would not conflict with a water quality control plan or sustainable groundwater management plan.

Although development under the No Project Alternative would be subject to local, state, and federal regulations that help to address hydrology and water quality impacts, the additional policies and actions related to hydrology and water quality in the proposed Project would not be adopted. The proposed Project includes policies encouraging infill development and a more compact development pattern to reduce potential impacts of new development on hydrology and water quality. Impacts would be similar and less than significant.

LAND USE AND PLANNING

The No Project Alternative would not increase residential densities nor would it change the land use designation to allow multifamily homes as principally permitted uses on several properties so it will not result in as much housing diversity as the proposed Project. The Proposed project includes policies to support compliance with regional plans and state policies regarding housing, greenhouse gas reduction, and transportation. The No Project Alternative would not implement those policies and therefore may be in conflict with enforceable state policies. Additionally, because this alternative would not plan for increased housing needs and would not include updated climate change planning consideration, it would not adequately meet the Project's housing and sustainability goals. Both the proposed Project and the No Project Alternative impacts related to land use and planning would be less than significant, however the No Project Alternative may have slightly greater impacts than the Project.

MINERAL RESOURCES

Like the proposed Project, the No Project Alternative does not have land uses or policies that would result in the loss of availability of a known mineral resource, or a locally important mineral resource recovery site delineated on a local general plan. There would be no impact under both projects.

NOISE

Development resulting from the No Project Alternative and from the proposed Project will be subject to site-specific design plans and the CEQA process. Development in the City resulting from the proposed Project would need to adhere to City ordinances pertaining to ground borne vibrations and noises while development outside of City limits under the No Project Alternative would need to adhere to County noise ordinances. Noise related impacts associated with both options would be similar and less than significant.

POPULATION AND HOUSING

The No Project Alternative would not increase residential densities nor would it change the land use designation to allow multifamily homes as principally permitted uses on several properties so it will not result in as much housing diversity as the proposed Project. Development consistent with the existing General Plan and proposed Land Use Element update would not displace people or housing units. Impacts for the Proposed Project and the No Project Alternative would be similar and would be less than significant.

PUBLIC SERVICES

Development under the No Project Alternative and the proposed Project would accommodate population growth, which would result in an increase in demand for schools, parks, libraries, recreational facilities, first responders, and other public services. The discussion in Section 4.16 explains how population growth will not result in an

increase in service needs to the point where new facilities are required. Impacts of public services would be less than significant under both options and there is no discernable difference in public services impacts between the two alternatives.

Recreation

Population growth that would occur under the proposed Project and No Project Alternative would result in an increase in the use of existing parks and recreational facilities. Both options would bring about orderly planned growth and improvement to recreational facilities to address this demand increase. Additionally, the construction or expansion of recreational facilities would require additional CEQA review and compliance along with adhering to existing building and zoning codes. Consequently, impacts related to recreation and parks facilities would be the same for the No Project Alternative and the proposed Project, which would be less than significant.

Transportation and Circulation

Under both the Project and the No Project Alternative the City will remain relatively compact with existing development and new growth concentrated in an area of a little more than one square mile. As a result, population and employment growth in this area would be expected to generate VMT per capita at rates similar to baseline conditions. The No Project Alternative would not increase residential densities nor would it change the land use designation to allow multifamily homes as principally permitted uses on several properties so it will result in a less compact development pattern which may slightly increase VMT compared to the Project because residents would have to travel a bit further from their homes to destinations for work and services. However, the differences in VMT between the two alternatives is expected to be small and this impact would remain significant and unavoidable.

Neither the No Project Alternative nor the proposed Project propose transportation network modifications that would disrupt existing or interfere with planned bicycle, pedestrian or transit service facilities, nor would they cause an inconsistency with applicable design standards. There are no anticipated differences between the two alternatives in this impact category. They would both have a less than significant impact.

Tribal Cultural Resources

Development encouraged by the No Project Alternative and the proposed Project would be subject to City code and CEQA regulations to mitigate and reduce impacts to tribal cultural resources and would occur in previously developed or disturbed areas. Reduced housing density in the City under the No Project Alternative could prompt development in the unincorporated areas of the planning area to accommodate population growth, which is generally less developed and disturbed than the City. This development would be subject to County regulations and policies protecting tribal cultural resources so there would not be significant impacts. Impacts related to tribal cultural resources would be similar and less than significant under both options.

Utilities and Service Systems

Development under the No Project Alternative and the proposed Project would accommodate population growth, which would result in an increase in demand for water, wastewater treatment, stormwater drainage, electric power, natural gas, telecommunications facilities, and solid waste disposal. The discussion in Section 4.20 explains how population growth will not result in an increase in service needs to the point where new facilities are required. Impacts on utilities and services would be less than significant under both options and there is no discernable difference in the utility and services impacts between the two alternatives.

Wildfire

Development associated with the proposed Project and the No Project Alternative will allow development that result in potential wildfire impacts. The proposed Project would implement the Draft Safety Element's policies and programs that protect new development from wildfire hazards and support evacuation from wildfire areas.

The No Project Alternative would rely upon the policies of the antiquated Ferndale Safety Element (1975), which are far less effective and comprehensive than those in the proposed Project in preventing damage and injury from wildfire, so potential wildfire impacts would be slightly greater under the No Project Alternative, however they would remain less than significant.

5.5 ALTERNATIVES CONSIDERED, BUT REJECTED

The following summarizes alternatives considered, but ultimately rejected for inclusion in the analysis as they would not meet most of the Project objectives, would not substantially reduce impacts compared to the proposed Project, or were determined to be infeasible.

REJECTED ALTERNATIVE A: ANNEXATION OF ADJACENT LANDS AND/OR DEVELOPMENT IN FORESTED HILLSIDES.

The potential impact to agricultural and forest resources is greater when implementing development goals that do not prioritize infill development, such as urban sprawl. The forested slopes south of Ferndale constitute a significant ecological, recreational, and economic resource for residents and the surrounding region. Lands outside of City limits are currently utilized for and are highly suitable for agricultural production and would potentially be threatened by sprawl development. This alternative would be inconsistent with the intent of the Land Use Element policies, impair agricultural production, promote sprawl, and extend traffic into currently lesser-developed areas. Accordingly, this alternative was rejected.

REJECTED ALTERNATIVE B: AGRICULTURAL SITES

There are approximately 133 acres of agricultural lands zoned Agricultural Exclusive (A-E) inside the City boundaries. A little less than half of it (58 acres) has wetlands according to the NWI. The remainder of A-E zoned land, 75 acres, represents an area that could be developed if the land use designations were changed, satisfying the City's projected housing needs for decades. However, the City and the community have strong policies focusing on agricultural preservation. This alternative was rejected because it conflicts with these policies.

REJECTED ALTERNATIVE C: DEVELOP MIXED USES ON THE FAIRGROUNDS

A portion of the 60-acre County Fairgrounds site in the City could be redeveloped with a mixture of commercial and housing to accommodate future population and economic growth in the City. If mixed use development occurred in portion of the Fairgrounds site, it could be somewhat integrated with the commercial development to the northeast to continue the City's infill development pattern. This alternative was rejected because of the Fairgrounds' high recreational value to residents of Humboldt County and Ferndale and the costs of purchasing the land and preparing the site for mixed-use development.

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that EIRs identify the Environmentally Superior Alternative and discuss the facts that support that selection. The Lead Agency is not, however, obligated to select the Environmentally Superior Alternative for implementation if it would not accomplish the basic Project objectives and/or is infeasible. If the No Project Alternative is determined to avoid or reduce more impacts than any other alternative, CEQA requires that the EIR identify an environmentally superior alternative among the other alternatives.

Overall, none of the alternatives identified in this analysis changed the impact conclusions that were identified for the proposed project. However, some of the alternatives did reduce the severity of the impact; thus, this analysis considers the severity of the impact to identify the environmentally superior alternative. Of the alternatives evaluated in this, the Reduced Density Alternative would be the environmentally superior alternative. The Reduced Density Alternative would result in less potential impacts to biological resources, greenhouse gas emissions, and hydrology and water quality because the Project would result in overall reduced development.

Pursuant to CEQA requirements, the Reduced Density Alternative would be considered the environmentally superior alternative; however, the proposed Project would offer benefits that would not be achieved by the Reduced Density Alternative, primarily more diverse infill housing opportunities with a compact development form in an area where public water and sewer service is available. Compared to the proposed Project, Alternative 1 would not fulfill the Project objectives as well. This is because the proposed Project would offer more housing opportunities and a diversity of land uses for future residents.

Table 5-1: Comparison of Project Alternatives

Resource Category	Impacts of Proposed Project	Impacts of Reduced Density Alternative 1	Impacts of No Project Alternative 2
Aesthetics	Less than significant	=	=
Agricultural and Forestry Resources	Less than significant	=	=
Air Quality	Significant but unavoidable	=	+
Biological Resources	Less than significant with mitigation	–	+
Cultural Resources	Less than significant	=	=
Energy	Less than significant	=	+
Geology and Soils	Less than significant	=	=
Greenhouse Gas Emissions	Significant but unavoidable	–	+
Hazards and Hazardous Materials	Less than significant	=	=
Hydrology and Water Quality	Less than significant	–	=
Land Use and Planning	Less than significant	=	+
Mineral Resources	No impact	=	=
Noise	Less than significant	=	=
Population and Housing	Less than significant	=	=
Public Services	Less than significant	=	=
Recreation	Less than significant	=	=
Transportation Circulation	Significant but unavoidable	=	=
Tribal Cultural Resources	Less than significant	=	=
Utilities and Service Systems	Less than significant	=	=
Wildfire	Less than significant	=	+

Notes: "-" indicates an impact that is less than the proposed Project
"+" indicates an impact that is greater than the proposed Project
"=" indicates and impact is equal to the proposed Project

6.0 OTHER CEQA SECTIONS

6.1 CUMULATIVE IMPACTS

The California Environmental Quality Act (CEQA) defines cumulative impacts as "two or more individual actions that, when considered together, are considerable or will compound other environmental impacts". Cumulative impacts are the changes in the environment that result from the incremental impact of development of the proposed Project and other nearby projects. For example, traffic impacts of two nearby projects may be insignificant when analyzed separately but could have a significant impact when analyzed together. Cumulative impact analysis allows an EIR to provide a reasonable forecast of future environmental conditions and can more accurately gauge the effects of a series of projects.

Because the Project is a comprehensive update to the General Plan Land Use and Safety Elements, cumulative impacts are treated somewhat differently than would be the case for a project-specific development. CEQA Guidelines Section 15130(b)(1)(B) gives direction for cumulative impact analysis and provides that an adequate discussion of environmental impacts can occur through:

> A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

By its nature, a comprehensive update to the General Plan Land Use Element which defines land uses addresses cumulative impacts by considering development that could occur to accommodate projected growth within the City. For example, the transportation analysis considers the overall change in vehicle miles travelled (VMT) due to land use changes within the City. Therefore, the analysis in this PEIR considers the cumulative impacts in the City due to implementing the Land Use Element Update. This is also true for the Safety Element which considers potentially hazardous conditions from regional sources, such as seismic activity and flooding, in addition to citywide impacts associated with increased density and growth. These cumulative effects are accounted for in the analysis of air quality, energy, greenhouse gas emissions, noise, and transportation impacts; therefore, these analyses would also be considered cumulative.

Other impacts, such as geology, soils, and cultural resources, are site specific and would not result in an overall cumulative impact from growth outside of the City. Therefore, the analysis of Project impacts in this PEIR also constitutes the cumulative analysis.

6.2 GROWTH INDUCING IMPACTS

CEQA requires an EIR to describe any growth-inducing impacts that would result from the proposed action. This section first describes the types of actions that tend to induce growth, and then discusses those impacts as they generally relate to the proposed action. The section then addresses four specific actions that potentially lead, directly or indirectly, to more growth, namely: (1) fostering economic or population growth; (2) removing existing obstacles to growth; (3) other precedent-setting actions; and (4) developing or encroaching upon existing open space.

CEQA Guidelines states the following in regard to potential growth-inducing impacts:

> §15126.2(e) The Growth-Inducing Impact of the Proposed Project. Discuss the ways in which the proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may further tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Based on Section 15126.2(e), a general plan would be considered growth-inducing if it would: directly or indirectly foster economic growth, population growth, or the construction of additional housing; if it would remove obstacles to population growth; if it would draw down the capacity of community service facilities to the extent that construction of new facilities would be necessary; or if it would encourage or facilitate other activities that cause significant environmental effects. For example, expanding road capacity or sewer and water facilities is typically considered "growth inducing" because such projects generally alleviate existing problems and/or inefficiencies, as well as provide capacity for some additional growth.

State law requires the general plan to serve as a comprehensive, long-term plan for the physical development of a community, for which the Land Use and Safety Elements play a central role. The Land Use Element and Safety Element Updates do not propose any specific development projects, so they will not directly involve any growth inducing impacts. However, indirect growth-inducing impacts would occur because the proposed land use changes and their locations, along with the proposed goals, policies, and implementation measures of the City's General Plan – in particular the proposed changes associated with the Land Use Element and Safety Element Updates – will provide a framework for future growth and development within the City of Ferndale. The environmental impacts that could result from potential growth are analyzed in detail throughout Chapter 4 of this EIR.

FOSTER ECONOMIC OR POPULATION GROWTH

As described in Chapter 3, Project Description, future population growth within the City is expected to remain consistent with past population trends. The City's population is stable and has not substantially increased since 1960. Additionally, projected countywide population growth suggests little growth to occur. As a result, there are no strong indicators of demographic or economic change expected in the City of Ferndale over the course of the planning period. The City is planning for population growth under low (0.03 percent per year annual average population growth rate (AAGR)), medium (0.25 percent AAGR), and high (0.50 percent AAGR) growth scenarios to ensure a range of population growth is able to be accommodated in the City. The low growth scenario mirrors the approximate population growth of the City since 1960, and the high growth scenario reflects the future housing needs anticipated in the Regional Housing Needs Plan prepared by the Humboldt County Association of Governments (HCAOG) in 2019.

The Land Use Element assumes that the City will grow from its estimated 2023 population of 1,371 to approximately 1,380 to 1,528 in 2045. The number of housing units are estimated to increase from 732 units in 2023 to approximately 737 to 817 units in 2045 based on the current ratio of persons per household. Land uses and future development consistent with the Land Use Element Update would result in additional housing, development of natural resource and commercial-related land uses, and the improvement of public services and

infrastructure within the City of Ferndale. The proposed Land Use Element Update would accommodate growth within the City and prioritizes the encouragement of growth in infill areas that have additional land and service capacity.

The proposed Land Use Element Update would directly or indirectly facilitate a small amount of construction-related employment. The amount of anticipated development is low and would likely be spread throughout the 20-year planning period, not requiring an influx of construction employment all at one time. Construction workers would likely come from private development companies in the local area to work within the City as most of the anticipated development is residential. Since construction workers would largely be expected to come from the existing regional workforce, the construction of future development projects would not be considered growth-inducing. As the population of the City grows, additional hiring of employees for local businesses could be necessary in order to properly accommodate this population growth. Population growth is likely to result in an increased demand for goods and services, directly or indirectly facilitating business growth as well. This could increase the incomes of existing and new residents of the City, further increasing the demand for goods and services which could facilitate additional economic growth and business expansion in the area. City operations may need additional assistance keeping up with the increase of the City's population which could result in the hiring of additional City staff or utilizing additional contracted staffing services with private companies.

The potential increase in population and economic activity resulting from the proposed Land Use Element Update could be considered growth inducing. However, the State of California Department of Housing and Community Development identifies the regional housing needs by County. The City is required to plan for such growth and implement policies and plans as needed to accommodate growth. The State Department of Finance released population projections for California counties in July 2022; the Humboldt County population in 2045 is estimated to be 123,892[1]. This County population projection is a decrease of 10,402 people from the 2023 population of 134,304[1]. Since Ferndale has had a stable population for the past 50 years and the County population is expected to decline by roughly 7.7 percent, the adoption of the proposed Land Use Element and Safety Element Updates are not anticipated to be growth-inducing in a manner that overwhelms the City's capacity to accommodate the potential growth.

The objectives of the Land Use Element and Safety Element Updates are to satisfy State mandates for general plans and resolve inconsistencies between General Plan elements and existing uses in the City while encouraging infill development to preserve agricultural lands and open space around the City's boundary. The altering of land use designations of certain parcels throughout the City is proposed as part of the Land Use Element to resolve these inconsistencies. The Project also seeks to maintain riparian habitat values along Francis Creek, adjust to climate change, and identify the land use, circulation, and environmental goals and policies of the City as they relate to land use and development. In addition to these objectives, any economic expansion induced by the Project is not anticipated to result in direct physical environmental effects beyond those discussed throughout Chapter 4, Environmental Analysis, of this EIR.

REMOVE OBSTACLES TO GROWTH

Growth may result from the removal of physical and regulatory obstacles that have in the past limited growth. Obstacles or impediments to growth can include the lack of infrastructure, lack of public services, or land use planning constraints such as restrictive General Plan policies or zoning regulations.

[1] State of California Department of Finance, P-2A Total Population for California and Counties 2020-2060, December 2022.

The Land Use Element Update has a goal to "ensure Ferndale's growth will proceed in a thoughtful, orderly manner, retains its unique character, and is located where there are efficient and equitable public services available" and seeks to accomplish this goal through land use plans and policies in the Land Use Element and Safety Element Updates that prioritize infill development. New development that may result from the implementation of the Project is encouraged to occur primarily in areas where existing roads, water, sewer, electric, and other utilities are in place so as to minimize the impact on existing infrastructure and services.

The proposed Land Use Element Update includes the conversion of land use designations on several parcels in the City. These changes would allow for increased residential development in areas that limited or only permitted lower density residential housing. This aspect of the Land Use Element Update would be considered as removing obstacles to growth.

New residential development allowed under the proposed Land Use Element Update could result in the construction of streets to provide adequate access to the new development. Additionally, infrastructure or utility service improvements could be necessary to support the new development. While substantial portions of the City are largely developed and contain adequate site-serving infrastructure, some infrastructure would have to be upgraded or expanded to accommodate infill development. In this sense, the proposed General Plan Update would induce growth by encouraging development of new infrastructure to support an orderly development pattern. Additionally, any subdivisions that may result from the implementation of the Land Use Element would require infrastructure and utility service improvements in order to support the new subdivision.

PRECEDENT-SETTING ACTIONS

An action that is associated with the proposed Land Use Element Update that could be considered precedent setting is the changes in land use designations. By changing the land use designations of properties to allow for higher density residential designations and converting agriculturally zoned land to residential, the Land Use Element Update may be setting a precedent for the future development of vacant and agricultural land and encouragement of growth in the City. Land use designation changes could facilitate future projects, such as subdivisions and residential housing developments. The existing General Plan and Land Use Element Update and this PEIR contain policies, implementation programs, and mitigations to reduce the environmental impacts of future growth. Similar policies, implementation programs and environmental documents will be needed to offset impacts of future public facilities, plans, and discretionary projects that follow.

DEVELOPMENT OF OR ENCROACHMENT UPON OPEN SPACE

The Land Use Element Update and Land Use Map have been developed to avoid development or encroachment on land containing natural resources such as riparian areas, agriculture, timberlands, forestlands, or recreational resources to the extent feasible. The proposed Land Use Element policies expand protections for these areas. Ferndale and the surrounding area are rich in natural resources, specifically wetlands, riparian areas, and agriculture. Focusing development within the existing City boundary where public services and utilities are near-by prevents encroachment and development of surrounding open space and agricultural lands while ensuring current and future population growth can be accommodated.

6.3 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL EFFECTS

Section 15126.2(c) of the CEQA Guidelines require that an EIR identify any significant environmental effects that cannot be avoided if the Project were implemented, including those that can be mitigated but not reduced to a level of insignificance. Mitigation measures proposed by the City have been identified throughout Chapter 4 of this Draft PEIR and would mitigate potentially significant project effects to less than significant. Mitigation

measures also are summarized in Table 2-1. The following impacts would remain significant and unavoidable after feasible mitigation measures are applied:

- The Project would result in a cumulatively considerable net increase of criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.
- The Project would contribute to cumulatively significant greenhouse gas emissions.
- The Project would result in significant impacts related to vehicle miles traveled (VMT).

6.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines §15126.2(c) *Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented*, requires EIRs to describe any significant irreversible environmental changes that would result from the proposed action (the implementation of the Land Use Element and Safety Element Updates) if the EIR is prepared in connection with the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency; the adoption by a Local Agency Formation Commission of a resolution making determinations; or a project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. 4321–4347. Since the Project is the adoption of the Land Use Element and Safety Element Updates, this section is required in this PEIR. Decision-makers must consider the benefits of a proposed project against the irretrievable commitments of resources in determining whether to approve a project. The CEQA Guidelines describe the scope of this analysis as follows:

> 15126.2(c) Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented. Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Implementation of the proposed Land Use Element and Safety Element Updates would allow development that would result in long-term irretrievable commitments of nonrenewable resources associated with the construction of new housing units, non-residential structures, streets, and other infrastructure. The commitment of natural resources would include lumber and forest products, sand and gravel, asphalt, petrochemicals, and other construction materials. The resulting consumption of fossil fuels would incrementally reduce existing supplies of fuel oil, natural gas, and gasoline. Consumption of these resources would occur with any development in the region and are not unique to the City of Ferndale or the Land Use Element and Safety Element Updates.

An incremental increase in energy demand would also take place during construction and postconstruction activities, including lighting, plumbing, and the heating of commercial, industrial, school, and residential buildings. The Land Use Element and Safety Element Updates include policies to encourage energy conservation and reduction and the use of renewable energy systems. However, even renewable energy systems involve the use of fossil fuels and minerals in their manufacture; although these systems are designed to result in considerably less demand for fossil fuels during their lifecycle than technologies powered by fossil fuel combustion.

The development and further urbanization within the City would effectively result in irreversible environmental changes; once an area is developed into a built environment, the likelihood of 'reversing' developed areas back

to an undeveloped state is highly improbable because the investment of resources and infrastructure for new development is an asset that tends to be protected over time. Therefore, such changes are considered irreversible. From a larger geographic perspective, attracting growth to the City of Ferndale, where infill development is prioritized and the footprint of the City could theoretically expand to accommodate growth thereafter, instead of allowing growth in outlying unincorporated areas of the County could reduce the scale of irreversible environmental effects for the region.

7.0 REPORT PREPARERS

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Appendix A

Energy Use, Emissions Factors, Calculations, and Key Results

The key data, calculations, and emissions factors that underpin the Air Quality, Energy, and Greenhouse Gas Emissions analyses are included in the sections that follow.

Electricity Use & Impacts

Assumed Population and Housing Growth Rates During Project Period		
	Ferndale Population	**Ferndale Housing**
Current Year (2023)	1,371	732
2035 Estimated population LOW growth rate scenario (0.03%)	1,376	735
2035 Estimated population HIGH growth rate scenario (0.5%)	1,456	779
2045 Estimated population LOW growth rate scenario (0.03%)	1,380	737
2045 Estimated population HIGH growth rate scenario (0.5%)	1,528	817

*Data in this table are from the PEIR Project Description

	# New Ferndale Residents	**# new housing units**	**Assumed # multi-family units**
Current Year (2023)	-	-	
2035 Estimated population LOW growth rate scenario (0.03%)	5	3	-
2035 Estimated population HIGH growth rate scenario (0.5%)	85	47	15
2045 Estimated population LOW growth rate scenario (0.03%)	9	5	-
2045 Estimated population HIGH growth rate scenario (0.5%)	157	85	30

*Assumes LOW population growth new housing units are Additional Dwelling Units or single-family homes w ADUs; these are also assumed to be the type of housing to be built during the initial stages of population growth and housing development.
*Multi-family housing units do not include the ADUs and single-family homes accounted for in the LOW / initial growth scenarios.

RCEA Ferndale Energy Use Data 2022[1]	
Data for the Town or Territory of Ferndale	**kWh/year**
Residential Use - All Load Serving Entities (LSE); includes PG&E data (689 accounts)	3,932,280
All Non-residential (AG + Commercial + Industrial + Direct Access) - All LSE; includes PG&E data (175 accounts)	2,342,399
Commercial /industrial only (excludes AG) - All LSE; includes PG&E data (174 accounts)	2,339,576
Total Ferndale Usage RCEA 2022 Data	**6,274,679**
Total Ferndale Usage PG&E 2022 Data[2]	**6,423,493**

[1]Source: RCEA Ferndale Energy use data provided by request

[2] Source: PG&E Ferndale Energy use data provided by request

Difference between PG&E total electricity use data and RCEA total electricity use data	2.4%

* Difference assumed to be AG loads

% Residential Electricity Use	**63%**
% Non-Residential Energy Use	**37%**

RCEA 2022 data

% PG&E service accounts in Town or Territory of Ferndale	11%
% RCEA service accounts in Town or Territory of Ferndale	89%

RCEA 2022 data

Energy Use per Household & Capita	
	kWh/year
Energy use / house[1]	**5,707**
Avg. per capita residential energy use[1]	**2,868**
% reduction in energy use for multi-family dwellings[2]	50%
Energy use / multi-family housing unit	**2,854**

[1] Calculated; All LSE residential only Town or Territory

[2] United States Environmental Protection Agency. (2011). Location Efficiency and Housing Type - Boiling it Down to BTUs, 2011.

Change in Ferndale Residential Energy Use (2022 - 2045)			
	Change in new residential energy use (kWh/ year) based on per household use	**Total Ferndale Residential Energy Use (kWh/year) using per house use**	**% change**
Current Year (2022)		3,932,280	
2035 LOW growth rate scenario (0.03%)	-	3,932,280	0.0%
2035 HIGH growth rate scenario (0.5%)	225,436	4,157,716	5.73%
2045 LOW growth rate scenario (0.03%)	-	4,157,716	0.0%
2045 HIGH growth rate scenario (0.5%)	185,485	4,343,200	4.72%

Assumed growth rate in the commercial / industrial sector 2022 - 2029	3%
Assumed growth rate in the commercial / industrial sector 2029 - 2045	3%

* Source: PEIR Project Description

Change in Ferndale Commercial / Industrial Energy Use (2022 - 2045)			
	Change in Use (kWh / year)	**Energy Use (kWh / year)**	**% change**
Current Year (2022)	-	2,339,576	-
2035	70,187	2,409,763	3%
2045	72,293	2,482,056	3%

Change in Ferndale Total Energy Use (2022 - 2045)			
	Additional Residential + Commercial Energy Use (kWh/year)	**Total Annual Energy Use (kWh/year)**	**% change**
Current Year (2022)	-	6,423,493	-
2035 LOW growth rate scenario (0.03%)	70,187	6,493,680	1.1%
2035 HIGH growth rate scenario (0.5%)	295,623	6,719,116	4.6%
2045 LOW growth rate scenario (0.03%)	297,728	6,721,221	4.6%
2045 HIGH growth rate scenario (0.5%)	483,213	**6,906,706**	7.5%

GHG Emissions Factors:

GHG Emissions Source	lbs. CH_4 / MWH	lbs. N_2O / MWH
PG&E electricity	0.033	0.004
RCEA electricity	0.033	0.004

Source: CalEEMod Appendix G Data Tables, Tab G-3

Global Warming Potentials	
CO_2	1
CH_4	25
N_2O	298

Source: CalEEMod Appendix G Data Tables, Tab G-39

Conversion factors	
Lbs. / Metric Ton	2,205
kWh / MWh	1,000

Greenhouse Gas Emissions from Utility Grid Mix				
	Lbs.CO_2 / kWh	**lbs. N_2O / kWh**	**lbs. CH_4 / kWh**	**Total Metric Tons CO_2e / kWh**
RCEA grid 2022[1]	0.049	0.000004	0.000033	0.0000231
PG&E grid 2022[2]	0.056	0.000004	0.000033	0.0000263

[1] CO_2 Emission factor from RCEA website: https://redwoodenergy.org/greenhouse-gas-emissions/; other emissions factors converted from lbs./MWh to lbs. / kWh from sources above.

[2] CO_2 Emission factor from: PG&E Community Wide GHG Inventory Report for FERNDALE 2005 to 2022; other emissions factors converted from lbs./MWh to lbs. / kWh from sources above.

	2022 (kWh/year)	**2045 LOW (kWh/year)**	**2045 HIGH (kWh/year)**
RCEA kWh / year	5,716,909	5,981,887	6,146,969
PG&E kWh / year	706,584	739,334	759,738

* Calculated based on % of electricity provided by each entity shown above.

GHG emissions calculated using annual energy use values for each planning year multiplied by the emissions factors shown above.

Total Greenhouse Gas Emissions from Energy Use			
	GHG emissions from Total Annual Energy Use[1] ($MTCO_2e$/year)	**Increase in GHG emissions ($MTCO_2e$/year)**	**% change**
Current GHG emissions (2023)	**151**		
2035 LOW growth rate scenario (0.03%)	153	2.0	1.1%
2035 HIGH growth rate scenario (0.5%)	158	6.9	4.6%
2045 LOW growth rate scenario (0.03%)	158	7.0	4.6%
2045 HIGH growth rate scenario (0.5%)	162	11.4	7.5%

[1] Includes all electricity provided to the City of Ferndale by both RCEA and PG&E

% biomass on RCEA's grid mix	15%

Source: RCEA Power Content Label 2022

Conversion Factors	
lbs. in 1 ton	2,000
kWh in 1 MWh	1,000
10^6	1,000,000
grams in 1 lb.	453.592

Criteria Pollutant Emissions Factors from Grid Electricity

Estimate Description	NO_x	unit	SO_x	unit	$PM_{2.5}$	Unit	PM_{10}	Unit
California eGRID 2022 data[1]	0.403	lb/MWh	0.015	lbs./MWh				
California eGRID 2022 data[1]					0.0209	lbs./MWh		
Converted eGRID data	0.00040	lbs/kWh	0.000015	lbs./kWh	0.000021	lbs./kWh		
Converted Argonne National Labs	0.00011	lbs/kWh	0.000015	lbs./kWh			0.000037	lbs./kWh
PG&E Humboldt Bay Generation Station[2]	31.2	tons/year	1.600000	tons/year	0.068000	tons/year	4.632	
Humboldt Sawmill Company[2]	239.6	Tons/year	38.7	Tons/year	23.7	Tons/year	26.5	Tons/year
Converted HSM Co . (lbs./ MWh)	2.7	lbs/MWh	0.62	lbs./MWh	0.38	lbs./MWh	0.42	lbs./MWh
Converted HSM Co . (lbs./ kWh)	0.0027	lbs/kWh	0.00062	lbs./kWh	0.000379	lbs./kWh	0.00042	lbs./kWh

[1] Assumes CA Emissions Factors for Criteria Pollutants = State Grid average Emissions Factors

[2] California Air Resources Board 2021 emissions data

Humboldt Sawmill Co Annual electric Power Generation (MWh / year)	125,000
% of power used to run Sawmill[2]	30%
% power available for RCEA grid	70%

[1] RCEA / Humboldt Sawmill Co. Power Purchase Agreement Amendment #2; *assumes that Humboldt Sawmill Co. produces contracted amount of power per year and does not sell excess power into the market. Also assumes Humboldt Sawmill Co. is the only source of criteria pollutant emissions in RCEA's grid mix.

[2] RCEA staff estimate

The criteria pollutant emissions factors shown above (lbs./kWh) were combined with electricity use (kWh/year) values to calculate the key criteria pollutant emissions levels.

Total Existing Criteria Pollutant Emissions 2022 - 2045				
	NO_x (Lbs./year)	**SO_x (Lbs./year)**	**CO (Lbs./year)**	**PM (Lbs./year)**
Local Electricity Production (all sources) 2022	346	13	no data	18
Local Electricity Production (all sources) 2045 LOW Growth Scenario	2,626	550		726
Local Electricity Production (all sources) 2045 HIGH Growth Scenario	2,718	569	no data	752

Wood Use & Impacts

	Ferndale Population	Ferndale Housing	# New Ferndale Houses
Current Year (2023)	1,371	732	-
2035 Estimated population LOW growth rate scenario (0.03%)	1,376	735	3
2035 Estimated population HIGH growth rate scenario (0.5%)	1,456	779	47
2045 Estimated population LOW growth rate scenario (0.03%)	1,380	737	5
2045 Estimated population HIGH growth rate scenario (0.5%)	1,528	817	85

Potential PM10 Emissions from New Woodstoves		
Average cords of wood burned / house in Ferndale / year[1]	2.5	cord of wood / year / house
# of Ferndale households currently using woodfired stoves[1]	100	houses
EPA Certified stove PM standard 2015[2]	4.5	g/hr. operation
EPA Certified stove PM standard 2022[2]	2.0	g/hr. operation
Conversion factors		
grams / lb.	453.592	
lbs./ton	2,000	
Density of cordwood		
U.S. DOE estimate (blend)	2,326	lbs./dry cord
Tons / Cord	1.16	
Tons wood burned / household / year[3]	2.91	
Months of wood burning / winter (Assumed)	4	
# logs / cord (Assumed; 600 - 800 average)	700	
# 14" logs / hour (eFireplacestore.com)	1	
Est. # burn hours / House / winter season[4]	1,750	
Modern woodstoves efficiency gain (% wood required for same heat)[2]	33%	
Tons wood burned / household / year using modern wood stove	0.96	
PM_{10} emissions / woodstove / winter (g PM_{10}/year)[5]	3,500	

[1] RCEA 2013 Energy Assurance Plan

[2] U.S. Environmental Protection Agency. Burn Wise; Choosing the Right Woodburning Stove

[3] Tons/cord * cords / year = tons wood burned / household / year

[4] (cords/year/house * logs/cord) / logs/hour = burn hours / house/year

[5] Burn hours/year * g/burn hour emissions factor for PM_{10} (above) = PM10 emissions / woodstove / winter

Additional cords of wood / year at maximum housing growth with 100% modern woodstoves	70

85 houses (max development) * 2.5 cords wood / season * 33% efficiency of modern woodstoves = 70 additional cords of wood consumed per year.

Criteria Pollutant Emission Factors	PM_{10} (Lb./Ton Wood Combusted)	CO (lbs./Ton Wood Combusted)	NOx (lbs./Ton Wood Combusted)	SOx (lbs./Ton Wood Combusted)
Conventional	30.6	230.8	2.8	0.4
Non-Catalytic	25.8	-	-	0.4
Catalytic	24.2	-	2	0.4

*Source: EPA AP42: Table1.10-1. EMISSIONFACTORSFORRESIDENTIALWOODCOMBUSTION

Current 2023 Woodstove Use				
	PM (lbs./year)	**CO (lbs./year)**	**NO_x (lbs./year)**	**SO_x (lbs./year)**
100 woodfired stoves	8,897	67,105	814	116

*Assumes all current wood stoves are conventional technology

Additional Criteria Pollutants from Wood Fire Stove Use in Ferndale				
	PM (lbs./year)	**CO (lbs./year)**	**NO_x (lbs./year)**	**SO_x (lbs./year)**
2035 Estimated population LOW growth rate scenario (0.03%)	70	0	6	1
2035 Estimated population HIGH growth rate scenario (0.5%)	1,091	0	90	18
2045 Estimated population LOW growth rate scenario (0.03%)	116	0	10	2
2045 Estimated population HIGH growth rate scenario (0.5%)	1,974	0	163	33

* Number of houses * Tons wood burned / year / house * Emissions factor (lbs. / ton) = lbs./year; Assumes all new houses have woodstoves, and all new wood stoves are catalytic.

Propane Use in Ferndale	
2013 use	50,000
2013 Houses using Propane	50
2035 additional houses high	47
2045 additional houses low	5
2045 Additional houses High	85
Assumed % new houses using propane	50%
Calculated average gallons / house / year	1000

Propane Use in Ferndale			
	Gallons / year	**% change**	**1,000 gallons / year**
2023 assumed current use	50,000	-	50
2035 High Growth additional propane use	23,500	47%	24
2045 Low Growth additional Propane use	2,500	5%	3
2045 High Growth additional Propane use	42,500	85%	43

CO2 Emissions Coefficient for propane	12.68	Lbs. CO2 / gallon

Greenhouse Gas Emissions from Propane Use (MTCO2e/year)		
	MTCO2e / year	**% change**
2023 MTCO2e / year	288	
2035 High growth scenario MTCO2e / year (additional emissions)	135	47%
2045 Low Growth Additional MTCO2e / year (additional emissions)	14	5%
2045 High Growth Additional MTCO2e / year (additional emissions)	244	85%

Wastewater

Wastewater Generation in Ferndale		
CA Water Board Avg per capita CA 2022[1]	37	gallons / capita / day
Average GPD wastewater per capita Ferndale from effluent data[2]	**45**	gallons / capita / day
Average gallons wastewater / capita 2004 design value[3]	100	gallons / capita / day

[1] California Water Boards (2022). Table TA-3.2. Comparison of how wastewater characteristics have changed over the life of typical California wastewater treatment facilities.
[2] Calculated based on Ferndale wastewater annual effluent data provided by a Humboldt County Department of Public Works Technical Memo.
[3] Metcalf & Eddy Wastewater Engineering 2004

New residential wastewater generation		
	GPD	**MGD**
2035 Estimated population LOW growth rate scenario (0.03%)	227	0.000227
2035 Estimated population HIGH growth rate scenario (0.5%)	3,852	0.003852
2045 Estimated population LOW growth rate scenario (0.03%)	408	0.000408
2045 Estimated population HIGH growth rate scenario (0.5%)	7,115	0.007115

Annual wastewater treatment direct emissions (short tons / gallon)			
Wastewater treatment type	CO_2 Bio	CH_4	N_{2O}
Aerobic	3.90E-07	1.34E-09	8.52E-10
Anaerobic	0.00000039	0.000000401	8.52E-10
Septic	-	0.00000025	8.52E-10

Source: CalEEMod Table G-35
Note: The AeroMod system used to treat Ferndale wastewater is entirely aerobic.

Current GHG Emissions from Ferndale Wastewater Treatment (Tons/year)				
	CO2 Metric Tons / year	**CH4 Metric Tons / year**	**N2O Metric Tons / year**	**Existing MTCO2e/year**
Current year (2023)	8	0.0276	0.0175	13.94

Additional GHG Emissions from Ferndale Wastewater Treatment (Metric Tons / year)					
	CO_2 Metric Tons / year	**CH_4 |Metric Tons / year**	**N_2O Metric Tons / year**	**Additional $MTCO_2e$/year**	**% change**
2035 Estimated population LOW growth rate	0.0293	0.0001	0.0001	0.05	0.36%
2035 Estimated population HIGH growth rate	0.4975	0.0017	0.0011	0.86	6.20%
2045 Estimated population LOW growth rate	0.0527	0.0002	0.0001	0.09	0.66%
2045 Estimated population HIGH growth rate	0.9189	0.0032	0.0020	1.60	11.45%

Appendix B

Vehicle Miles Traveled (VMT) Calculations and Key Results

	Ferndale Population	# New Ferndale Residents	# New Ferndale Residents who drive
Current Year (2023)	1,371	-	-
2035 Estimated population LOW growth rate scenario (0.03%)	1,376	5	5
2035 Estimated population HIGH growth rate scenario (0.5%)	1,456	85	78
2045 Estimated population LOW growth rate scenario (0.03%)	1,380	9	8
2045 Estimated population HIGH growth rate scenario (0.5%)	1,528	157	145

US Census % Ferndale Residents <15yrs (2022)[1]	12.5%
US Census % Ferndale Residents >85yrs (2022)[1]	6.9%
Percent of Drivers >85 who maintain a license (2021)[2]	69.1%
Percent of Drivers >85 who are driving	4.8%
Assumed % of Ferndale residents who are driving[3]	92.3%

[1.] Source: US Census American Community Survey, Ferndale, CA
[2] Source: US Dept. of Transportation Federal Highway Administration; https://www.fhwa.dot.gov/policyinformation/statistics/2021/dl20.cfm
[3] Assumes no one under 15 is driving, and only 69% of those > 85 are driving.

Change in Ferndale Vehicle Miles Traveled (VMT)			
	Change in VMT / year	**Vehicle Miles Traveled / year**	**%change**
Current Year (2023)	n/a	15,981,721	
2035 LOW growth rate scenario (0.03%)	53,778	16,035,500	0.3%
2035 HIGH growth rate scenario (0.5%)	914,230	16,895,952	5.7%
2045 LOW growth rate scenario (0.03%)	96,801	16,078,522	0.6%
2045 HIGH growth rate scenario (0.5%)	1,688,637	17,670,359	10.6%

The current (2023) city-wide annual VMT is estimated to be 15,981,721 miles per year based on a per capita average VMT of 11,657 miles / year. The total estimated annual VMT for Ferndale by the end of the planning period (2045) is 96,801 additional VMT / year (Low population growth scenario) to 1,688,637 VMT / year (High population growth scenario).

California Department of Motor Vehicles data was used to calculate the total gallons of fuel used in Ferndale each year in order to calculate the emissions from transportation fuel use.

Humboldt County Registered Vehicles by type (DMV data)		% of total
Cars	79,224	64%
Trucks	39,726	32%
Motorcycles	4,566	4%
Total	123,516	

Source: https://www.dmv.ca.gov/portal/dmv-research-reports/research-development-data-dashboards/vehicles-registered-by-county/

Average Fuel Economy by Vehicle Class Type	Average Fuel Economy (MPG) Gasoline	Average Fuel Economy (MPG) Diesel
Passenger Cars	24.2	27.3
Light Truck / Van	17.5	19.8
Motorcycles	44	49.7

Source: U.S. Department f Energy, Average Fuel Economy by Major Vehicle Category. https://afdc.energy.gov/data.

Gallons of Transportation Fuels Used by class of registered vehicle in Ferndale			
	2023 (gal./yr)	2035 High Growth Rate (gal./yr)	2045 High Growth Rate (gal./yr)
Passenger Cars Gasoline	423,586	447,817	468,342
Truck / Van Gasoline	293,722	310,525	324,757
Motorcycles Gasoline	13,427	14,195	14,846
Total Transportation (gallons)	**730,736**	**772,537**	**807,946**

Tailpipe Emissions Factors from Combustion of Gasoline in CA (g/MJ)			
CO_2 g/MJ	CH_4 g/MJ	N_20 g/MJ	Total CO_2e g/MJ
72.89	0.14	0.91	73.94

Source: California Air Resources Board (2018). CA-GREET 3.0 Supplemental Document and Tables of Changes. Table 1

MJ / Gallon gasoline	119.54

Source: California Air Resources Board (2018). CA-GREET 3.0 Supplemental Document and Tables of Changes. Table 22.

Total Greenhouse Gas Emissions from Changes in Transportation 2023 - 2045 ($MTCO_2e$/year)			
	2023 ($MTCO_2e$/yr)	2035 High Growth Rate ($MTCO_2e$/yr)	2045 High Growth Rate ($MTCO_2e$/yr)
Passenger Cars Gasoline	3,744	3,958	4,140
Truck / Van Gasoline	2,596	2,745	2,870
Motorcycles Gasoline	119	125	131
Total Transportation	6,459	6,828	7,141

Difference of 682 $MTCO_2e$/yr from 2023-2045 (High Growth Scenario 0.5%)

	NO_x (Lb./1,000 gal.)	**SO_x (Lb./1,000 gal.)**	**CO (Lb./1,000 gal.)**	**PM (Lb./1,000 gal.)**
Gasoline - all internal combustion engines	102	5.3	3,940	6.5

Source: SCAQMD Default Combustion Emission Factors; https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/default-combustion-emission-factors.pdf?sfvrsn=12.

VMT Methods

Annual Vehicle Miles Traveled (VMT) is used to quantify several impacts associated with vehicle use. For this analysis, VMT was used to calculate the criteria pollutant and greenhouse gas emissions impacts associated with the maximum population growth that could occur with the proposed changes to the allowable housing density in the updated Land Use code. The updated Safety Element contains policies that are designed to reduce VMT, and therefore no additional VMT modeling was necessary for this component of the General Plan Update.

VMT estimates for Ferndale were calculated using Humboldt County-level data from the California Office of Traffic Safety (OTS) Crash Ranking Results (2017-2021), a traffic study commissioned as part of the Humboldt County General Plan Update (2007), and the Humboldt County Association of Governments Regional Transportation Plan (2013/2014). Crash Rankings are based on various factors including Daily Vehicle Miles Traveled (DVMT). The annual DVMT data is provided to the OTS by the California Department of Transportation (Caltrans). The population data listed in the Crash Ranking Results are from the California Department of Finance. The Data used in this analysis are based on the Humboldt County DVMT for 2021. In that year, Caltrans data indicate that Humboldt County drivers collectively drove 3,525,067 miles each day (DVMT). The population estimate for that same year is 135,553 persons. The resulting per capita DVMT for the County is 25.6 miles, which is slightly higher than the state average of 24.6 daily VMT.

This analysis assumes that Ferndale's per capita daily VMT is equal to the County's average per capita daily VMT. The DVMT data were used in combination with the anticipated maximum Ferndale 2045 population growth of 157 new residents to determine the potential increase in annual VMT. The maximum growth in new residents that will be contributing to new VMT was reduced by 14% to reflect the number of residents under 15 years of age that are not legally able to drive (US Census data) as well as those residents over 85 who no longer maintain their driver's license (U.S. Department of Transportation Federal Highway Administration data). US Census Means of Transportation to Work by Selected Characteristics data show all persons over 16 years of age living in Ferndale have at least one vehicle available to them, so therefore all other age groups are included in the VMT calculation.

The analysis also assumes the 25.6 daily vehicle miles traveled measured in 2021 will remain constant over time. This assumption is based on the observed rate of change in annual VMT data. As the Table below shows, changes in VMT have both increased and decreased over time.

CA OTS Crash Rankings Results Humboldt County Annual VMT & Rate of Change			
Year	**DVMT**	**Annual VMT**	**% change from previous year**
2017	3,637,775	1,327,787,875	-
2018	3,709,743	1,354,056,195	2%
2019	4,077,550	1,488,305,750	10%
2020	3,471,775	1,267,197,875	-15%
2021	3,525,067	1,286,649,455	2%

Although the dataset above includes the Covid-19 shutdown periods when people were working from home and driving less, data across the longer time scales show a decreasing trend on average as shown in the table below. For this reason, this analysis assumes per capita VMT will remain flat during the timeframe of this planning period.

Rate of change in VMT Humboldt County (% / year)	
Annual VMT Rate of change 2007 - 2013 data	0.20%
Annual VMT Rate of change 2013 - 2017 data	-0.04%
Annual VMT rate of change 2017 - 2021 data	-0.62%
Annual VMT rate of change 2007 - 2021 data	-0.13%

Analysis:
According to the California Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (2018), lead agencies have the discretion to set and apply their own thresholds of significance related to transportation impacts. The OPR has, however, established recommended criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria include: 1.) the reduction of greenhouse gas emissions, 2.) the development of multimodal transportation networks, and 3.) a diversity of land uses. The OPR Technical Advisory further states:

> "Adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT." Further, "In areas where existing jobs-housing match is closer to optimal, low-income housing nevertheless generates less VMT than market-rate housing. Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT."

The OPR Technical Advisory notes that consistency with regional and state climate goals is a key consideration when determining a project's transportation impact significance. Meeting the California greenhouse gas reduction targets will require reductions in VMT as well as increased vehicle fuel efficiency and a transition to low-carbon fuels. While a single project alone is not responsible for achieving VMT reductions per se, OPR recognizes that coordinating land use and transportation planning will be necessary to achieve California VMT and greenhouse gas emissions reductions targets.

The updated Land Use Element allows for an increase in housing and a greater diversity of housing types all located withing the existing City boundaries. A portion of the proposed new housing and offices are to be developed in the unused floors of existing buildings. The additional housing and increased diversity of housing types proposed (i.e., apartments, duplexes, condos) are designed to serve a wider range of income levels as well as address the current unmet housing needs of the aging population, existing workforce, and anticipated population growth.

Generally, an increase in population will inherently lead to an increase in total annual VMT. Given the current dominance of gasoline and diesel fueled cars and trucks, there will be an associated air quality and greenhouse gas emissions impacts associated with the additional VMT in the short and medium-time frame. However, this impact will decrease with each passing year as more people, businesses, and government agencies transition to driving electric vehicles and other low-carbon fuel vehicles. Per California Executive Order N-79-20, the California Air Resources Board is developing regulations to mandate that 100% of in-state sales of new passenger cars and trucks are zero-emission by 2035. Meeting this target would achieve more than a 35% reduction in greenhouse gas emissions and an 80% improvement in NOx emissions from cars statewide. Therefore, in the long run, the additional VMT associated with population growth will have a diminished impact on air quality and GHG emissions.

It is important to note that the increase in population will not necessarily lead to a 1:1 increase in VMT as some people formerly commuting into Ferndale to work (due to lack of housing) may move in and reduce annual VMT through the reduced daily commuting distances. Additionally, not all new residents will be of driving age, and thus, as the current aging population drives less, increases in VMT may be curtailed.

Ferndale is a small community of 1,371 residents. The relative impact of the increase in VMT from the additional residents in Ferndale is 1.4% of Humboldt County's estimated total VMT in 2021. Because Ferndale's Land Use Update plan calls for infill and more compact land use development, the increase in VMT will be minimal when compared to County-wide and state VMT levels.

Policies in the Land Use and Safety Updates support reductions in City-wide VMT such as: promoting infill development with a diversity of housing located close to the city center, increasing infill development in the unused floors of existing buildings withing the city's main downtown area, improving multi-modal transportation corridors such as bike trails, working with the Redwood Transit to establish more frequent bus service, installing EV charging stations, and Transitioning City-owned vehicles to electric. These actions, if implemented, will help Ferndale to reduce overall annual VMT as well as diminish the impacts from vehicular travel over time. These activities collectively address all three of the OPR's recommended transportation significance thresholds. Additionally, impacts associated with VMT will decline during the timeframe of this General Plan Update through state-mandated clean transportation policies and local clean transportation initiatives.

Resources

1. Census American Community Survey data for Ferndale City, CA. (2022). https://data.census.gov/table/ACSST5Y2022.S0804?g=160XX00US0623910. Accessed 1/16/24.

2. California Office of Traffic Safety Daily Vehicle Miles Traveled (2020). https://www.ots.ca.gov/media-and-research/crash-rankings-results/?wpv_view_count=1327&wpv-wpcf-year=2020&wpv-wpcf-city_county=Humboldt+County&wpv_filter_submit=Submit. Accessed 1/16/24.

3. US Department of Transportation; Highway Statistics Series (2019). https://www.fhwa.dot.gov/policyinformation/statistics/2019/ps1.cfm. Accessed 1/16/24.

4. Humboldt County General Plan Update (2012). https://humboldtgov.org/273/General-Plan-Update. Accessed 1/16/24.

5. California Governor's Office of Planning and Research; Technical Advisory on Evaluating Transportation Impacts in CEQA (2018). https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed 1/27/24.

6. California Executive Order N-79-20 (2020). https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf. Accessed 1/28/24.

7. Humboldt County Association of Governments Regional Transportation Plan VROOM 2013/14 (2014). https://www.hcaog.net/sites/default/files/vroom_rtp_2013-14_upd_feir.pdf. Accessed 1/16/24.

- NOTICE OF PREPARATION -
Draft Environmental Impact Report for
City of Ferndale Land Use and Safety Element Updates

ANNOUNCEMENT:	Notice is hereby given that the City of Ferndale as Lead Agency under the California Environmental Quality Act (CEQA), will prepare an Environmental Impact Report (EIR) to evaluate the environmental effects associated with the proposed General Plan Land Use and Safety Element Updates (Project). This project includes associated zoning amendments necessary to implement the General Plan. The City is soliciting comments regarding the scope and content of the environmental information.
ANNOUNCEMENT DATE:	February 3, 2023
PROJECT TITLE:	Ferndale Land Use and Safety Element Updates
PROJECT LOCATION:	City of Ferndale Planning Area
LEAD AGENCY:	City of Ferndale
LEAD AGENCY CONTACT PERSON:	Vanessa Blodgett, Contract City Planner vanessab@planwestpartners.com Phone: (707) 786-4224 City of Ferndale PO Box 1095 Ferndale, CA 95536
NOP PUBLIC COMMENT PERIOD:	The Notice of Preparation (NOP) review period begins on Friday, February 3, 2023 and closes on Monday, March 6, 2023. Please submit written responses by 5:00 p.m. on March 6, 2023, to the address or email above.

PURPOSE OF THIS NOTICE OF PREPARATION

The City of Ferndale (City) will serve as lead agency under CEQA and an Environmental Impact Report (EIR) will be prepared to analyze the proposed Project. The EIR will identify the potential for significant environmental effects to satisfy the requirements of CEQA [Public Resources Code §21000 et seq.].

In accordance with the California Code of Regulations §15082, the City has prepared this Notice of Preparation (NOP) to inform agencies and interested parties that an EIR will be prepared for the proposed Project. The purpose of this notice is:

(1) To serve as the notice to provide interested parties, including members of the public, potential responsible agencies, agencies involved in funding or approving the Project, agencies providing public services (schools, utilities, medical and emergency services), and trustee agencies responsible for natural resources affected by the Project, with sufficient information to provide meaningful responses as to the scope and content of the EIR; and

(2) To advise and solicit comments and suggestions from interested parties regarding the preparation of the EIR, environmental issues and alternatives to be addressed in the EIR, and any related issues.

PROJECT OVERVIEW

The Ferndale General Plan is a planning document with text and diagrams that express the goals, objectives, and policies necessary to guide the community toward achieving its vision over a long-term planning period (typically 20 years). City decision makers rely on the General Plan as the basis for making decisions on matters such as land use, transportation, open space and conservation, provision of public services, and environmental quality and safety. It is also a policy document that guides decisions related to protecting and enhancing what the community

values most, such as historic preservation, protecting and enhancing the character of the community, and open space.

The City is preparing an update of two of its existing General Plan Elements; Land Use and Safety. The City of Ferndale's General Plan was last comprehensively updated and adopted in 1986. Since then, the City's land use needs have changed due to economic and demographic conditions and updates to state guidelines and policies. The Land Use Element also serves as the City's consolidated Open Space and Conservation Elements and provides the City an opportunity to review and program City-wide land uses for future growth. There have been changes to state guidelines since the Safety Element was drafted in 2014; the element will be updated to bring it into compliance with current regulations.

PROJECT DESCRIPTION

The Project will update and amend the City's existing General Plan Land Use and Safety Elements. The Project will update the goals, policies, and implementation programs that articulate the vision for the City's long-term physical and economic development, while preserving open space areas and enhancing the quality of life for residents. These elements have been prepared to comply with the requirements of California Government Code §65300 which mandates that each city and county adopt a comprehensive, long-range, internally consistent plan for future development. The proposed updates:

- Satisfy modern State mandates for General Plans that have been issued since the General Plan was last updated;
- Emphasize infill development to preserve greenbelts around the City;
- Adjust to climate-change and promote sustainability;
- Promote social justice and racial equity;
- Amend inconsistencies; and
- Ensure consistency and compliance with other City plans that have been adopted or revised in recent years, such as the 2019 Housing Element.

Land Use Element

The Land Use Element will continue to include the general distribution, location, and extent of the uses of land for housing, business, industry, open space, agriculture, natural resources, public buildings and grounds, and other categories of public and private uses of land within the City. As the Land Use Element was last updated in 1986, the data, analyses, and policies in the plan will be updated to reflect the current conditions and vision of the City. The intent of the proposed Land Use Element is to provide more flexibility in housing options while still protecting the historic character of the area. The Land Use Element will also continue to accommodate projections of population and economic growth using infill principles. The City's anticipated growth during the planning period is expected be contained within the present City boundary and concentrated largely within already developed residential areas and planned development areas as identified in the Element. Targeted increases in land use density (or increases in the allowable uses and development standards) will be necessary in portions of the City to be consistent with the policies and programs set forth in the City's 6th Cycle Housing Element that was prepared in 2019 and to prepare for anticipated growth allocations in the City's 7th Cycle Housing Element scheduled for 2027.

Safety Element

The Safety Element will continue to identify potential risks to persons and property resulting from fires, floods, earthquakes, landslides, and other hazards. The Safety Element is intended to provide an overview of potential hazards in the area and provide policies to help improve City infrastructure to be more resilient against hazards. The Safety Element Update includes new State-mandated safety considerations for climate change and emergency evacuation routes to comply with CGC Section 65302(g) and SB 375. Ferndale may experience some

effects from climate change such as changing precipitation patterns which can lead to more intense flooding, increased chance of wildfire to the south, and changing drainage patterns due to sea level rise. The Public Safety Element will acknowledge the context of other relevant plans at the regional and state level and align City goals and policies with these efforts. The City is currently included in the Humboldt County Local Hazard Mitigation Plan (adopted 2020) and County-wide Climate Action Plan (in progress).

Zoning Amendments

The proposed project will require zoning amendments to implement. Specifically, the Land Use Element proposes increased density and implementation programs that will require new zoning to accommodate. Population growth is anticipated to be absorbed throughout the City primarily through infill. The City expects rezoning to accommodate new residential development, smaller lot areas, and ordinances to address state law related to accessory dwelling units (second units).

EIR ANALYSIS

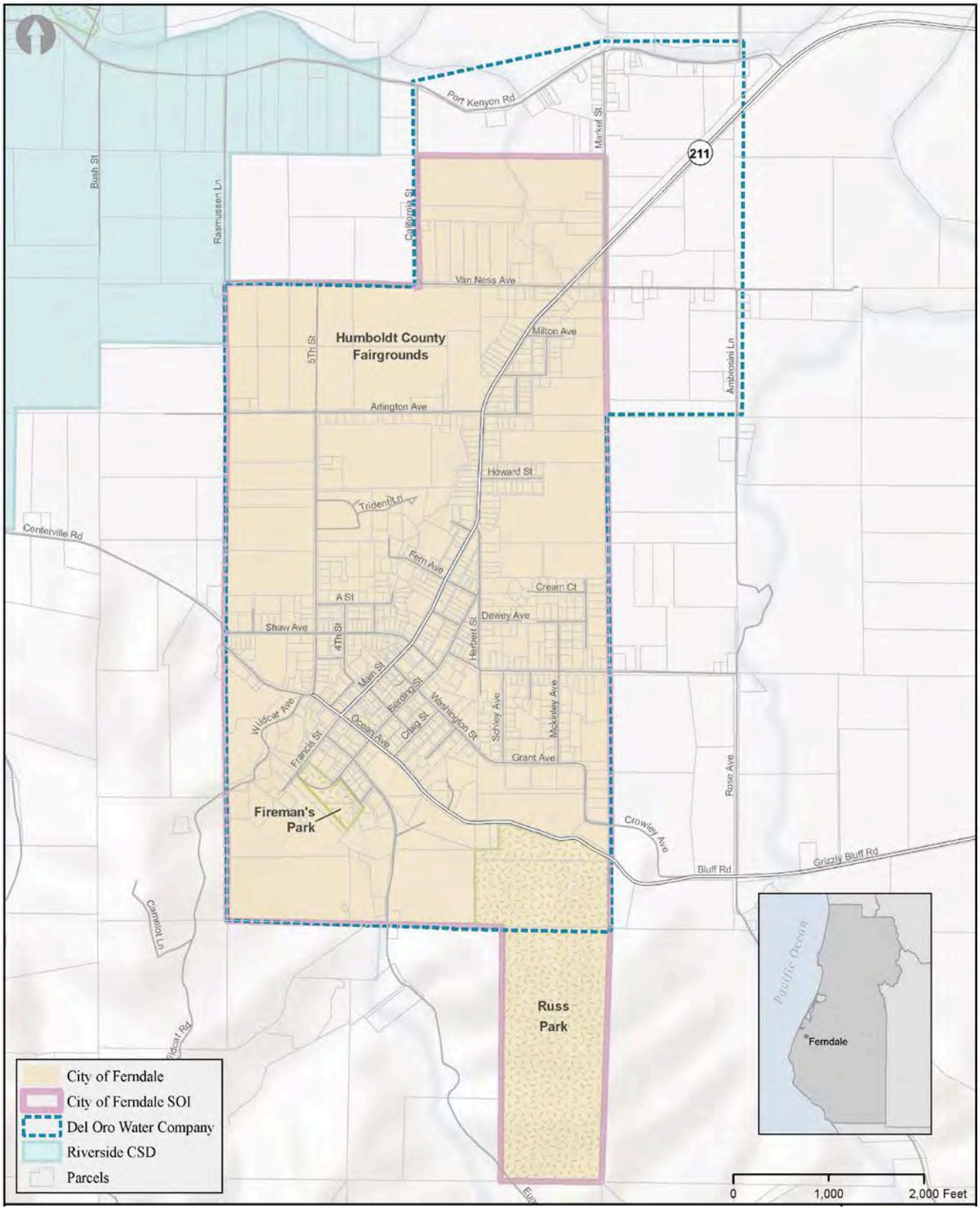
The City of Ferndale, as the lead agency under CEQA, will prepare and EIR for the Ferndale Land Use and Safety Element Update in accordance with current CEQA Guidelines. The Ferndale Land Use and Safety Element Update is considered a "project" under CEQA and is therefore subject to CEQA review. As a policy document, the General Plan provides guidance and sets standards for several areas of mandatory environmental review for later "projects" that would be undertaken by local government and the private sector. The EIR will evaluate potential environmental impacts associated with adoption and implementation of two of the General Plan Elements; Land Use and Safety. The EIR will disclose potential impacts of the Ferndale Land Use and Safety Element Update, propose mitigation measures to avoid and/or reduce impacts deemed potentially significant, identify reasonable alternatives, and compare the environmental impacts of the alternatives to the proposed Project's impacts.

Pursuant to Section 15063(a) of the CEQA Guidelines, an Initial Study will not be prepared. The EIR will evaluate the full range of environmental issues contemplated under CEQA and the CEQA Guidelines, including the following resource categories: 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, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation and Circulation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

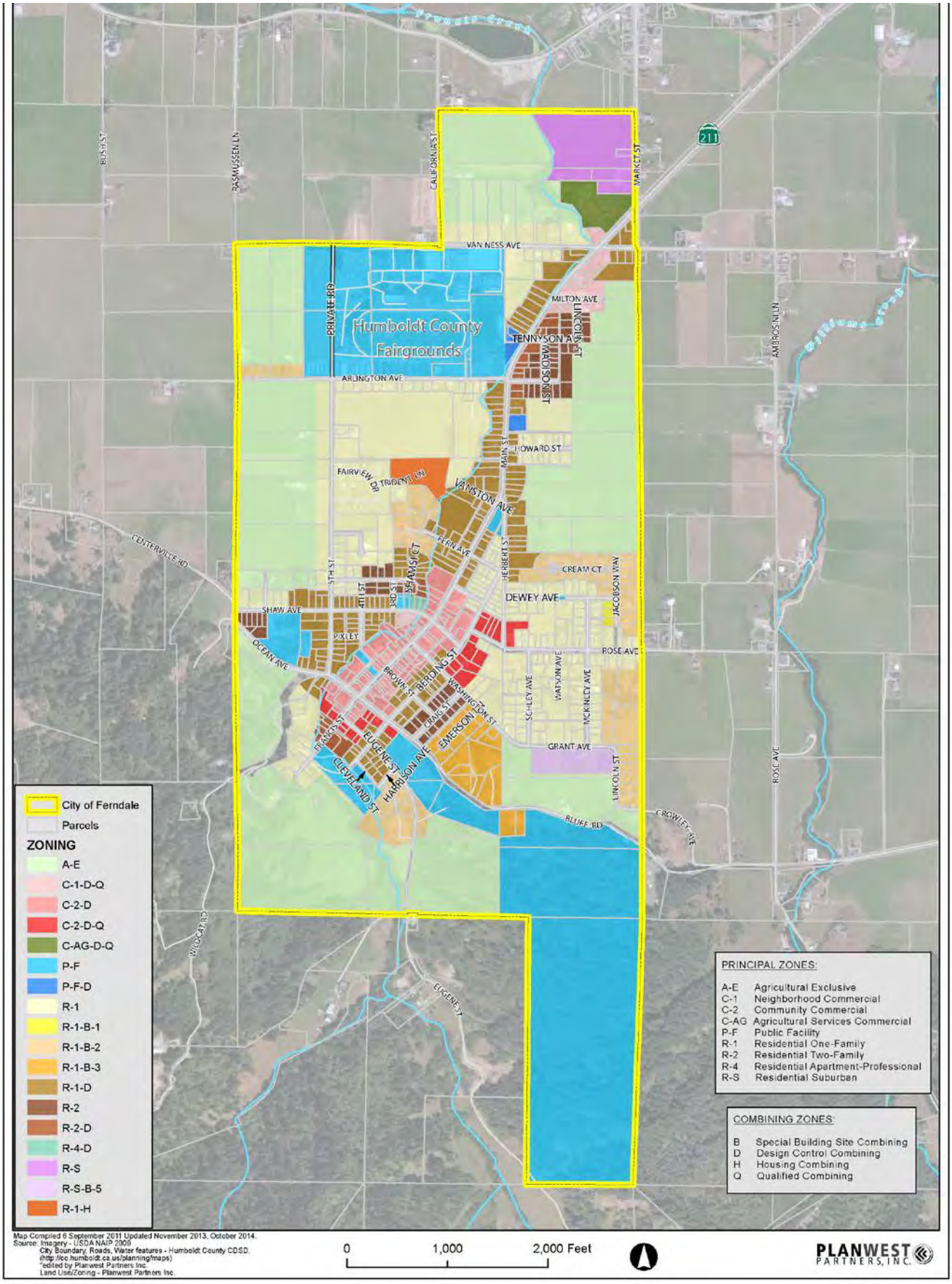
The following resource categories may have potentially significant impacts, and mitigation measures may be required to reduce potential significant impacts: Air Quality, Biological Resources, Historic and Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Population and Housing, Transportation, and Utilities and Service Systems. The EIR will also evaluate potential cumulative impacts, growth inducement, and other CEQA-required topics.

Comments regarding the scope of the proposed EIR can be submitted to *vanessab@planwestpartners.com* or mailed to City of Ferndale, P.O. Box 1095, Ferndale, CA 95536. Please submit written responses by 5:00 p.m. on March 6, 2023. This NOP is available for review on the City's General Plan webpage at: https://ci.ferndale.ca.us/documents/general-plan/.

City of Ferndale Regional Setting



City of Ferndale Current Land Use/Zoning



APPENDIX C.2

NOTICE OF PREPARATION COMMENT LETTERS

Below is a list of the agency comment letters received in response to the Notice of Preparation (see Appendix C.1) released on February 3, 2023 which closed at 5:00 p.m. on March 6, 2023. The agency comment letters that were received follow.

Letter ID	Commenting Public Agency	Comment Letter Dates
A	Native American Heritage Commission	2/8/2023
B	California Department of Fish & Wildlife	3/9/2023

NATIVE AMERICAN HERITAGE COMMISSION

Appendix C.2

Letter A

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 8, 2023

Vanessa Blodgett
City of Ferndale
PO Box 1095
Ferndale, CA 95536

Re: 2023020217, Ferndale Land Use and Safety Element Updates Project, Humboldt County

Dear Ms. Blodgett:

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.

AB 52

[C.2-2]

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

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.

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 (https://ohp.parks.ca.gov/?page_id=30331) 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: Cameron.Vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

cc: State Clearinghouse

[C.2-6]

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
601 Locust Street
Redding, CA 96001
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Appendix C.2

Letter B

March 9, 2023

Vanessa Blodgett, Contract City Planner
City of Ferndale
PO Box 1095
Ferndale, CA 95536
Vanessab@planwestpartners.com

Subject: Ferndale Land Use and Safety Element Updates (SCH# 2023020217)

Dear Vanessa Blodgett:

On February 8, 2023, the California Department of Fish and Wildlife (CDFW) received the City of Ferndale's (Lead Agency) Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Ferndale Land Use and Safety Element Updates (Project). CDFW appreciates the opportunity to comment on the Project and understands the State review period ends March 9, 2023.

As the Trustee Agency for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary to sustain their populations (Fish & G. Code, §§ 1801 & 1802). As a Responsible Agency, CDFW administers the California Endangered Species Act (CESA) and other provisions of Fish and Game Code that conserve the State's fish and wildlife public trust resources. CDFW offers the following comments and recommendations in our role as Trustee and Responsible Agency pursuant to the California Environmental Quality Act (CEQA; Pub. Resources Code § 21000 *et seq*.). CDFW participates in the regulatory process in its roles as Trustee and Responsible Agency to minimize Project impacts and avoid potential significant environmental impacts by recommending avoidance and minimization measures. These comments are intended to reduce the Projects impacts on public trust resources.

Project Description and Location

The Project covers the incorporated area of the City of Ferndale, Humboldt County, California. As described in the NOP, the Project will update and amend the City's existing General Plan Land Use and Safety Elements. The General Plan serves as a decision-making framework and policy document for the City and was last comprehensively updated and adopted in 1986. Since then, the City's land use needs have changed due to economic and demographic conditions and

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updates to State guidelines and policies. The Land Use Element also serves as the City's consolidated Open Space and Conservation Elements and provides the City an opportunity to review and program City-wide land uses for future growth. There have been changes to State guidelines since the Safety Element was drafted in 2014; the element will be updated to bring it into compliance with current regulations. The Project will require zoning amendments to implement proposed updates to the General Plan.

Environmental Setting and Special Status Species

The Salt River watershed is habitat for a variety of sensitive terrestrial and aquatic species, including anadromous fish. The river and its tributaries provide important spawning and rearing habitat for Southern Oregon / Northern California evolutionarily significant unit (ESU) of coho salmon (*Oncorhynchus kisutch*; Federal (FT) and State threatened [ST]), winter- and summer-run Northern California distinct population segment (DPS) of steelhead (*O. mykiss*; FT, Species of Special Concern [SSC] and SE, respectively), and coast cutthroat trout (*O. clarki clarki*; SSC). Creeks, riparian corridors, wetlands, and estuarine systems also provide habitat for western brook lamprey (*Lampetra richardsoni*; SSC), longfin smelt (*Spirinchus thaleichthys*; Federal candidate for listing, ST), and northern red-legged frog (*Rana aurora*; SSC). Other special status species known or likely to occur in the area include pallid bat (*Antrozous pallidus*; SSC), western bumblebee (*Bombus occidentalis*; State candidate for listing), Northern Spotted Owl (*Strix occidentalis caurina*; FT, ST), and Howell's montia (*Montia howellii*, California Rare Plant Rank [CRPR] 2B.2), among others.

Comments and Recommendations

CDFW would like to offer the following comments and recommendations on this Project in our role as a Trustee and Responsible Agency pursuant to CEQA (Pub. Resources Code § 21000 *et seq*.). CDFW's comments focus on potential direct, indirect, and cumulative impacts to aquatic, wetland, and riparian species and habitat, as well as the potential indirect impacts of habitat fragmentation and urbanization.

Wetland and Riparian Habitat Protection: CDFW understands the City has identified several conservation policies pertaining to soil protection and the preservation and enhancement of natural areas. To implement these policies, CDFW supports the proposed concept of a stream setback ordinance and looks forward to collaborating on the details. Urbanization and increased development near wetland and riparian areas adversely affect habitat quality by modifying hydrologic regimes and stream morphology, degrading water quality, altering microclimate, and reducing habitat connectivity and complexity (CDFW 2004, Tockner et al. 2008, CDFW 2014). Wetlands, riparian corridors, and associated floodplains are vital to over half of the listed species in California and provide essential benefits and habitat for fish, migratory birds, bats, amphibians, reptiles, and sensitive plants (CDFW 2014). Not only are these areas integral to conserving regional biodiversity (Naiman et al. 1993); they also provide important ecosystem

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services, such as flood control, groundwater recharge, filtration, and sediment retention (Novitzki et al. 1996, Tockner et al. 2008). No-disturbance buffers are widely used to protect sensitive habitats such as wetlands and streams and can be an effective means of mitigating for land use impacts in adjacent areas. Efforts to preserve headwater streams and restore urban riparian buffers may mitigate for some of the impacts of urbanization (Moore and Palmer 2005). Although Francis Creek is constrained by development, coho salmon (Divine 2005) and steelhead have been observed in the lower reaches (C. Loomis, District Fisheries Biologist pers. comm. 2023), further underscoring the importance of protecting or restoring upstream habitat. Although the existing Land Use Element proposed a stream management area for Francis Creek, setbacks were as little as 25 feet from the stream bank. Such narrow buffers provide little protection for aquatic resources (Castelle et al. 1994). CDFW recommends the City implement adequate no-disturbance buffers for streams and wetlands with provisions to limit and mitigate for development impacts (**Recommendation 1**). Prescribed buffer distances may vary depending on existing conditions, but CDFW encourages the Lead Agency to refer to the Humboldt County Streamside Management Areas and Wetlands Ordinance, when defining buffer widths and more importantly, the starting point for setbacks. Since 1994, CDFW Northern Region has been recommending setbacks start from the top of bank or edge of riparian, *whichever is greater*. For wetlands, the setback should start from the delineated boundary. Streamside management areas and wetland buffers should allow for the removal of riparian vegetation only under limited circumstances, with referral to CDFW for activities that entail substantial removal of riparian vegetation or alterations to the bed, bank or channel of any stream (Fish & G. Code § 1602).

Stormwater Management: CDFW applauds the City's intent to absorb population growth through infill principles and looks forward to learning more about the implementation of increased density. However, even infill development has the potential to adversely affect aquatic and riparian resources if not appropriately designed. Development that converts forests, fields and other semi-natural areas to impervious surfaces such as structures and pavement tends to intensify stormwater runoff and increase non-point source pollution. Rather than infiltrating through soil and vegetation, rainfall is rapidly discharged to streams and rivers, resulting in higher peak flows, increased bank instability, erosion, channel incision, flooding, discharge of fine sediment, and the introduction of pollutants such as hydrocarbons, heavy metals, garbage, pathogens, nutrients, and pesticides (USEPA 2000, CDFW 2014). In addition to the direct effects of unmitigated runoff, development can indirectly affect aquatic and riparian ecosystems by reducing groundwater recharge, resulting in low summer flows, higher stream temperatures, and loss or even elimination of aquatic habitat during the summer. CDFW therefore recommends the DEIR thoroughly evaluate potential direct, indirect, and cumulative impacts of increased stormwater runoff (**Recommendation 2**). To minimize potential impacts of development, CDFW recommends the Updates include clear policy and standards requiring the use of

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low-impact development (LID) design standards to mitigate stormwater runoff to predevelopment levels (**Recommendation 3**).

Water Budget: The Housing Element (2019) assures that existing water sources have the capacity to support growth, and that sites identified in the vacant land inventory can access water services through the Del Oro Water Company, which serves the City of Ferndale and surrounding unincorporated areas via groundwater. CDFW has an interest in the sustainable use of groundwater, as many sensitive species and ecosystems depend on groundwater and interconnected surface water. Groundwater extraction can deplete connected surface water flow, resulting in poor water quality, higher temperatures, and barriers to salmonid migration (CDFW 2021). In light of these concerns, CDFW recommends the City fully evaluate the indirect and cumulative impacts of increased groundwater extraction necessitated by increased density (**Recommendation 4).** If surface water diversion is still under consideration to meet the City's domestic water needs or supply rural properties, CDFW supports resource policies and standards to ensure adequate stream flow for fish and wildlife (**Recommendation 5).**

Habitat Fragmentation and Land Conversion: CDFW agrees with the concerns identified in the original Land Use and Safety Elements regarding the conversion of timber and agricultural lands. Road construction, land clearing, and other development activities in the Francis Creek watershed could further destabilize steep slopes, increasing the risk of landslides and contributing to downstream flooding and sedimentation. Furthermore, forested areas within and adjacent to the southern City limits provide relatively contiguous habitat for numerous wildlife, including sensitive species such as Northern Spotted Owl. Development in forested and agricultural lands results in direct habitat loss through land conversion, as well as indirect loss through habitat fragmentation. Encroachment effects include the introduction or spread of invasive species, increased prevalence of predators and other wildlife adapted to the wildland-urban interface, traffic mortality, and increased light and noise disturbance (Davies et al. 2001, CDFW 2014). CDFW supports the City's goal of encouraging infill development and recommends the Update reiterate policies and standards that limit new development in forested and agricultural land (**Recommendation 6**).

Development within Floodplains: CDFW acknowledges the City's efforts to limit development in floodplains and supports strengthening policies and programs to that effect. Development within the floodplain not only degrades essential habitat; it also exposes property to increased flood risk and constrains natural processes that would otherwise store and dissipate floodwaters. Regional climate change models for California and the Pacific Northwest predict wetter winters, extreme storm events, and a higher frequency of flooding (Bell et al. 2004, Kim 2005). It is therefore reasonable to expect increased flooding frequency and severity over the life of the Updates.

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Although the City has already adopted several ordinances pertaining to floodplain and drainage management, CDFW recommends prohibiting subdivision that would enable residential development in the 100-year floodplain (**Recommendation 7**).

Vegetation Management: The Draft Safety Element highlights the risk of wildfire in the forested slopes along the southern extent of City limits, within the State Responsibility Area (SRA). CDFW acknowledges the importance of protecting life and property and therefore encourages the City to take a thoughtful approach to defensible space and fuel reduction. Defensible space requirements for vegetation clearance increase the ecological footprint and environmental effects of new subdivisions and other development. Furthermore, vegetation removal on steep slopes may exacerbate erosion, sedimentation, and slope instability, thereby contributing to downstream flooding and water quality issues. Areas subject to routine vegetation removal are also prone to infestation by invasive plant species, which pose a significant threat to biodiversity. To minimize the impacts of vegetation removal on aquatic and riparian habitat, CDFW recommends the City develop a standard requiring new building sites and associated defensible space to be placed outside streamside management areas and wetland buffers (**Recommendation 8**). Furthermore, CDFW suggests the City adopt landscaping guidelines for new development to minimize the risk of introducing or spreading invasive plant species (**Recommendation 9**). Ideally, planting palettes would incorporate locally appropriate native species, but at minimum, landscaping and vegetated LID features should avoid invasive species listed in the Cal-IPC Inventory.

Summary of Recommendations

1) CDFW recommends the City implement adequate no-disturbance buffers for streams and wetlands with provisions to limit and mitigate for development impacts.
2) The DEIR should thoroughly evaluate potential direct, indirect, and cumulative impacts of increased stormwater runoff.
3) To minimize potential impacts of development, CDFW recommends the Updates include clear policy and standards requiring the use of low-impact development (LID) design standards to mitigate stormwater runoff to predevelopment levels.
4) CDFW recommends the City fully evaluate the indirect and cumulative impacts of increased groundwater extraction necessitated by increased density.
5) If surface water diversion is still under consideration to meet the City's domestic water needs or supply rural properties, CDFW supports resource policies and standards to ensure adequate stream flow for fish and wildlife.
6) CDFW supports the City's goal of encouraging infill development and recommends the Update reiterate policies and standards that limit new development in forested and agricultural land.
7) Although the City has already adopted several ordinances pertaining to floodplain and drainage management, CDFW recommends prohibiting

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subdivision that would enable residential development in the 100-year floodplain.

8) To minimize the impacts of vegetation removal on aquatic and riparian habitat, CDFW recommends the City develop a standard requiring new building sites and associated defensible space to be placed outside streamside management areas and wetland buffers.
9) Ideally, planting palettes would incorporate locally appropriate native species, but at minimum, landscaping and vegetated LID features should avoid invasive species listed in the Cal-IPC Inventory.

If you have any questions, please contact Kathryn Rian, Environmental Scientist, by email at Kathryn.Rian@Wildlife.ca.gov.

Sincerely,

DocuSigned by:
Rebecca Garwood
B5D12ECE94324AF...

Rebecca Garwood
Northern Region Coastal Habitat Conservation Program Manager

ec: State Clearinghouse
State.Clearinghouse@opr.ca.gov

Kathryn Rian, Michael van Hattem
California Department of Fish and Wildlife

References

Bell, J. L., L. C. Sloan, and M. A. Snyder. 2004. Regional changes in extreme climate events: a future climate scenario. Journal of Climate 17:81-87

Castelle, A. J., C. Conolly, M. Emers, E. D. Metz, S. Meyer, M. Witter, S. Mauermann, T. Erickson, and S. S. Cooke. 1992. Wetlands buffers use and effectiveness. Adolfson Associates, Inc., Shorelands and Coastal Zone Management Program, Washington Department of Ecology, Olympia, WA. Pub. No. 92-10.

CDFW. 2004. Recovery strategy for California coho salmon. Report to the California Fish and Game Commission, California Department of Fish and Wildlife, Sacramento, CA.

CDFW. 2014. Technical memorandum: development, land use, and climate change impacts on wetlands and riparian habitats – a summary of scientifically supported conservation strategies, mitigation measures, and best management practices. California Department of Fish and Wildlife, Eureka, CA.

DocuSign Envelope ID: BEFF5F56-4319-42B0-B94D-0359E38AA9C4

CDFW. 2021. Memorandum: conditions for 2021 fish-passage and staging/holding in the lower Eel River, at Sandy Prairie. California Department of Fish and Wildlife, Eureka, CA.

Davies, K. F., C. Gascon, and C. R. Margules. 2001. Habitat fragmentation: consequences, management, and future research priorities. Pages 81-97 *in* M. E. Soule and G. H. Orians, (eds.) Conservation Biology: Research Priorities for the Next Decade. Island Press, Washington, DC.

Divine, P. 2005. Field Note: Francis Creek. California Department of Fish and Wildlife, North Coast Watershed Assessment Program, Fortuna, CA.

Kim, J. 2005. A projection of the effects of the climate change induced by increased CO_2 on extreme hydrologic events in the western U.S. Climate Change 68:153-168.

Moore, A. A., and M. A. Palmer. 2005. Invertebrate biodiversity in agricultural and urban headwater streams: implications for conservation and management. Ecological Applications 15:1169-1177.

Naiman, R. J., H. Decamps, and M. Pollock. 1993. The role of riparian corridors in maintaining regional biodiversity. Ecological Applications 3:209-212.

Novitzki, R. P., R. D. Smith, and J. D. Fretwell. 1996. Wetland functions, values, and assessment. National Water Summary on Wetland Resources, U.S. Geological Survey Water-Supply Paper 2425.

Tockner, K., S. E. Bunn, C. Gordon, R. J. Naiman, G. P. Quinn, and J. A. Stanford. 2008. Flood plains: critically threatened ecosystems. Pages 45–61 *in* N. Polunin (ed.) Aquatic Ecosystems: Trends and Global Prospects. Cambridge University Press, Cambridge, U.K.

USEPA. 2000. Low Impact Development (LID) a literature review. U.S. Environmental Protection Agency, EPA-841-B-00-005. Washington, D.C.