CITY OF YREKA
2016 Greenway Master Plan and Flood Hazard Reduction Project

DRAFT ENVIRONMENTAL IMPACT REPORT

SCH No. 2015092039

Lead Agency:

CITY OF YREKA
701 FOURTH STREET
YREKA, CA 96097

DECEMBER 2016

PREPARED BY

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INTERNATIONAL

CITY OF YREKA

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ES - Executive Summary

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15123, this section of the Draft Environmental Impact Report includes a brief summary of the project, significant impacts, and proposed mitigation measures. The remainder of the document and technical appendices provide the discussion and support for the conclusions found here.

ES1 PURPOSE AND SCOPE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

This Draft Environmental Impact Report (Draft EIR; DEIR) has been prepared by the City of Yreka (City) to analyze the potential environmental effects associated with implementation of the proposed 2016 Greenway Master Plan and Flood Hazard Reduction Project, in Yreka, California. DEIR analysis focuses on potential environmental impacts that could arise from implementation of the proposed project, as regulated and guided by the large number of federal, state, and local regulations, including ordinances, General Plan policies, and local resource plans. The DEIR is intended to provide a credible worst-case scenario of the impacts resulting from project implementation.

ES2 PROJECT SUMMARY

The proposed project includes two components: (1) the 2016 Greenway Master Plan and (2) three specific projects within the Master Plan. Because of the two project components, this EIR analyzes the project's environmental impacts using two different analysis methods:

1) The overall 2016 Greenway Master Plan is analyzed as a program EIR using a broader spectrum based on requirements outlined in CEQA Guidelines Section 15168.

2) A project-level analysis is prepared to consider the impacts from implementation of a portion of the Master Plan at three proposed project reaches—Central Reach, North Reach, and South Reach—using a project-specific analysis based on the requirements of CEQA Guidelines Section 15161.

2016 GREENWAY MASTER PLAN

The 2016 Greenway Master Plan expands the area of the current 2005 Master Plan with a focus on reducing flood hazards throughout the city by attempting to contain floodwaters within natural greenway corridors in the urban environment. In addition to flood control the expanded greenway corridors will result in drainages kept in a more natural state, which helps improve water quality, provide wildlife habitat and migration corridors, and the provision of areas for recreation and transportation such as trails and open space.

The purpose of the Greenway Master Plan update is to build on the previous plan. The updated plan also includes provisions to:

- Enhance fish habitat.
- Provide educational/interpretive opportunities.
- Develop recreational opportunities.
- Improve law enforcement and public security.
- Encourage land and easement acquisition.

- Contribute to recovery of Coho salmon under the Endangered Species Act.
- Develop a new approach to urban stream restoration that achieves substantial flood hazard reduction and water quality improvement benefits while also incorporating greenway trails.
- Support urban stormwater management along small tributary drainages that yield cumulative flood hazard, water quality, and wildlife habitat benefits.
- Increase opportunities for trail linkages to schools, places of work, and residential areas.

FLOOD HAZARD REDUCTION PROJECT

The construction of improvements for three of the reaches—Central, North, and South—is included in the Flood Hazard Reduction (FHR) grant from the California Department of Water Resources (DWR). The improvements for all three reaches include:

- Widening the Yreka Creek channel.
- Excavating the existing area directly adjacent to the creek in order to lower the ground level, which would allow for better flood control.
- Providing overflow floodwater channels.
- Placing the removed soils (spoils) to raise the adjacent areas out of the floodway.
- Providing an expanded trail system.
- Providing expanded greenway corridors.

In addition to the improvements listed above, the three individual projects of the FHR Project—Central Reach, North Reach, and South Reach—all have specific project components, which are identified in Section 2.0, Project Description.

ES3 PROJECT ALTERNATIVES SUMMARY

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project which could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. Further, CEQA Guidelines Section 15126.6(e) requires that a "no project" alternative be evaluated in an EIR. Section 4.0, Project Alternatives, provides a detailed discussion and a qualitative analysis of the following scenarios:

- **Alternative 1 – No Project Alternative.** CEQA Guidelines Section 15126.6(e)(1) states that a No Project Alternative must be analyzed in every EIR. In the case where the project is a revision of an existing land use or regulatory plan, policy or ongoing operation, such as the proposed 2016 Greenway Master Plan, the "no project" alternative will be the continuation of the existing plan, policy, or operation into the future, in this case, the 2005 Greenway Master Plan. The comparison is that of the proposed project versus what can reasonably be expected to occur within the Master Plan area should the 2016 Greenway Master Plan and FHR Project not be approved. The analysis allows decision-makers to compare the impacts of approving the project with the impacts of not approving the project (CEQA Guidelines Section 15126.6(e)(3)(A)).

- **Alternative 2 – Channelization of Yreka Creek.** Channelization of creeks consists of straightening, deepening, widening, clearing, or lining existing creek channels. It is an engineering technique that has been used many times to control floods, improve drainage, control erosion, and improve navigation. Much of the Yreka Creek corridor, as it exists today, has been altered over time to allow development along the creek. These "improvements" consisted of raising the land adjacent to the creek, straightening the creek, and building retaining walls adjacent to the creek to provide for better flood control and in effect channelize the creek. Alternative 2 would continue this process by lowering the current creek bed, raising adjacent land, as necessary, and using retaining walls extensively all along Yreka Creek where it passes through the city. Alternative 2 would also remove existing vegetation adjacent to the creek and armor the creek bed and banks and sides with cement or rip-rap where it would then meet the retaining walls. This would be designed to reduce the potential for flooding in the city. Future development of creekside trails and recreation areas would not occur, as this area would primarily be used for flood control.

- **Alternative 3 – Reduced Project.** The Reduced Project Alternative would be the accomplishment of those improvements for Yreka Creek and its 19 reaches only. Improvements to Juniper Creek, Greenhorn Creek, Little Humbug Creek, and the westside tributaries would not occur. Alternative 3 would result in improvements to 8.9 miles of stream corridor including 446 acres of greenway, 15.9 miles of trails, the installation of 10 trail bridges, and the removal of 11 homes and/or main buildings, as well as other attributes. The Reduced Project Alternative would reduce the project area from 14.9 stream miles to 8.9 miles, 46 reaches to 19, and spoils acreage from 179 to 121 acres.

ES4 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

The City of Yreka was identified as the lead agency for the proposed project. In accordance with Section 15082 of the CEQA Guidelines, the City prepared and distributed a Notice of Preparation (NOP) for the proposed project that was circulated for public review on September 16, 2015. Concerns raised in response to the NOP were considered during the preparation of the EIR. A copy of each letter is provided in **Appendix 1.0** of this DEIR. Section 1.0, Introduction, summarizes issues and areas of concern related to the proposed project, as presented to the City by agencies and the public during the NOP review period. The complete text of the NOP and the NOP comments are included as **Appendix 1.0** to this Draft EIR.

ES5 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-1 displays a summary of project impacts and proposed mitigation measures that would avoid or minimize potential impacts. In **Table ES-1**, the level of significance is indicated both before and after the implementation of each mitigation measure. For detailed discussions of all mitigation measures that would provide mitigation for each type of environmental impact addressed in this Draft EIR, refer to the appropriate environmental topic section (i.e., Sections 3.1 through 3.9).

The project proposes changes to an area encompassing four named creeks, 14.9 stream miles, and 46 reaches. These changes, in combination with long-term, region-wide growth and development, has the potential to generate both positive and negative environmental impacts in a number of areas, including direct construction impacts on biological resources, cultural resources, and hydrology and water quality, as well as indirect impacts associated with use of this environment on areas such as aesthetics.

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. Of the potential environmental impacts discussed in Section 3.0 of the DEIR, no project impacts are considered cumulatively considerable and/or significant and unavoidable.

ES6 AREAS OF NO IMPACT

The potential for the proposed project to result in certain impacts was not included in **Table ES-1** because the City of Yreka determined that the proposed project could not result in an impact in these environmental areas for the following reasons. Further discussion of these areas is included in Section 3.9 of this EIR. Impacts not included in **Table ES-1** include those pertaining to:

- **Agricultural and Forest Resources** – The proposed project site does not contain, and is not adjacent to, Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or any land subject to a Williamson Act contract.

- **Land Use** – The proposed project does not result in development that would be inconsistent with the City's General Plan or Zoning Ordinance or any habitat conservation plans or natural community conservation plans. The Flood Hazard Reduction Project does not result in any construction not allowed in the floodway area. There would be no impact to land use.

- **Mineral Resources** – The Yreka General Plan indicates that no mineral resources zones are designated within the boundaries of the Yreka Planning Area. Therefore, no impacts would occur to mineral resources.

- **Noise** – Development of the Flood Hazard Reduction Project will result in short-term construction noise. However, Policy 9 of the Yreka General Plan Noise Element exempts construction activities from City noise standards because construction is temporary. In addition, Noise Element Policy 10 limits construction activities to the hours between 7 a.m. and 5 p.m. For these reasons, short-term noise levels related to construction of the proposed project would be less than significant. Once completed, noise levels from the Greenway Master Plan area are not expected to increase beyond existing conditions because the plan is a continuation of an existing use. Therefore, noise impacts associated with construction and operation of the proposed project would be less than significant.

- **Population and Housing** – The proposed project would not result in the removal of houses, although a few may need to be relocated. The Flood Hazard Reduction Project may increase employment opportunities in the city; however, this employment will be for a relatively short time period during construction and is not expected to result in an increase in the city's population. Therefore, the project would have no impact on population and housing.

- **Public Services** – The 2016 Greenway Master Plan and the development of the Flood Hazard Reduction Project would not require the expansion or new construction of fire, police, parks and recreation, or school services or facilities. The Greenway Master Plan does not increase the need for additional public services facilities, as it does not propose any actual development projects. A master plan may increase the potential for development, which as a result increases the need for additional public services. In this case, however, the Greenway Master Plan does not result in additional commercial, residential, or industrial development that would then need to be served by public services.

- **Transportation and Circulation** – The Greenway Master Plan does not impact transportation and circulation in the city, as it does not generate any traffic. The Flood Hazard Reduction Project may have temporary traffic impacts during construction due to construction vehicles, street closures, and construction adjacent to the street resulting in traffic rerouting. However, these traffic impacts are considered short term and would not result in a long-term decrease in the level of service on the surrounding streets. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor.

- **Other Utilities** – The proposed project may result in temporary impacts to public utilities such as moving electrical lines, water lines, etc. However, these impacts are only temporary and would not result in new or expanded facilities beyond the area of construction. No additional demand for water, sewer, storm drainage, or electrical service would be required with completion of the Flood Hazard Reduction Project. The addition of solid waste to the landfill resulting from development of the project would not increase the tonnage beyond the landfill's permitted amount or result in the closure of the landfill prior to the anticipated 2055 date. As a result, the proposed project would have a less than significant impact to solid waste disposal.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Aesthetics			
Impact 3.1.1: Adversely Affect a Scenic Vista and Substantially Degrade the Visual Character of the Site	LTS	None required	LTS
Impact 3.1.2: Substantially Damage Scenic Resources on a Scenic Highway	NI	None required	NI
Impact 3.1.3: Light and Glare	LTS	None required	LTS
Impact 3.1.4: Cumulative Degradation of Visual Character	LCC	None required	LCC
Air Quality			
Impact 3.2.1: Violate Air Quality Standard or Contribute Substantially to an Air Quality Violation	PS	**MM 3.2.1** The following dust control measures shall be incorporated into all Greenway Master Plan projects to reduce short-term emissions resulting from construction. Depending on weather and site conditions, measures shall include, but are not limited to, the following: • Use regular watering to control dust generation as described below. • When transporting soil and other dust-generating materials by truck during construction activities, cover materials and/or maintain 2 feet of freeboard. • Wash or wet-sweep paved streets adjacent to construction sites as necessary to remove accumulated dust. • During earth-moving operations, conduct watering as necessary to prevent visible emissions from extending beyond active areas. • Water all unpaved roads used for any vehicular traffic at least once per every two hours of active operations and restrict vehicle speed on unpaved roads to 15	LTS

NI – No Impact LTS – Less Than Significant PS – Potentially Significant LSM – Less Than Significant with Mitigation
LCC – Less Than Cumulatively Considerable CC – Cumulatively Considerable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		miles per hour (mph), or as appropriate to reduce dust. • Pave, maintain a wet surface, or apply dust suppressants on all unpaved access roads, parking areas, and staging areas. • Suspend land clearing, grading, earth-moving, or excavation activities when winds exceed 20 miles per hour. • Cover inactive storage piles of topsoil or landscape materials. • Post a publicly visible sign with the number and person to contact regarding dust complaints. This person shall have the authority and responsibility to respond and take corrective action within 24 hours. • Construction staging areas should be located at a distance that would reduce odors and dust emissions from existing schools and residential areas.	
Impact 3.2.2: Exposure of Sensitive Receptors to Toxic Air Contaminant Pollutant	LTS	None required	LTS
Impact 3.2.3: Create Objectionable Odors Affecting a Substantial Number of People	LTS	None required	LTS
Impact 3.2.4: Conflict with Any Air Quality Attainment Plans	NI	None required	NI
Impact 3.2.5: Result in a Cumulatively Considerable Net Increase in Nonattainment Criteria Pollutant	LCC	None required	LCC
Biological Resources			
Impact 3.3.1: Impacts to Candidate, Sensitive, or Special-Status Species	PS	**MM 3.3.1a Preconstruction Plant Surveys.** The applicant shall retain qualified personnel to perform focused preconstruction surveys to determine the presence/absence of special-status plant species with potential to occur in and adjacent to (within 25 feet, where appropriate) the proposed impact area of each	LTS

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		project component. These surveys shall be conducted in accordance with CDFW *Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities* (Nelson 1994). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys shall be scheduled to coincide with known flowering periods and/or during appropriate developmental periods that are necessary to identify the plant species of concern and will be reviewed and accepted by the City of Yreka Planning Department prior to site disturbance or construction activity. **MM 3.3.1b Preconstruction Reptile and Amphibian Surveys.** The applicant shall retain qualified personnel to search for and relocate foothill yellow-legged frogs and western pond turtles prior to the start of any grading activities on a daily basis. **MM 3.3.1c Preconstruction Nesting Bird Surveys.** The applicant shall retain qualified personnel to perform focused preconstruction surveys to determine the presence/absence of nests of bird species protected under the Migratory Bird Treaty Act. These surveys shall be conducted prior to any vegetation removal taking place between March 1 and August 31. If an active nest of a non-raptor species is discovered, a 100-foot exclusionary buffer shall be installed around the nest. If an active raptor nest is discovered, a 500-foot exclusionary buffer shall be installed around the nest. These buffers shall remain in place until it is determined that the nest is no longer active. **MM 3.3.1d Minimize Impacts to Spawning and Rearing Anadromous Fish.** The City of Yreka shall consult with NMFS and CDFW regarding potential impacts to coho salmon, and implement all conservation measures and permit requirements prescribed by those agencies, including measures designed to minimize impacts by timing construction activities to minimize potential impacts to spawning and rearing fish. Implementation of these conservation measures and permit requirements	

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		would assist in reducing potential adverse impacts to anadromous fish to a less than significant level. **MM 3.3.1e Worker Environmental Awareness Training.** The project proponent shall retain qualified personnel to conduct mandatory contractor/worker awareness training for project personnel. The awareness training will be provided to all personnel to brief them on the identified location of sensitive biological resources, including how to identify species most likely to be present and the need to avoid impacts to biological resources (e.g., plants, wildlife, and jurisdictional waters), and to brief them on the penalties for not complying with biological mitigation requirements. If new personnel are added to the project, the project proponent will ensure that they receive the mandatory training before starting work. **MM 3.3.1f Avoidance and Minimization Measures.** The following measures shall be implemented throughout project implementation: a) To enable wildlife to pass through the project site during construction, the perimeter security fence shall leave a 4- to 5-inch opening between the fence mesh and the ground or the fence shall be raised 4 inches above the ground. The bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence. b) To enable the movement of animals along Yreka Creek and its tributaries, any fencing that crosses the creek shall leave a gap of no less than 24 inches between the fence mesh and the bed of the channel. c) To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with escape ramps	

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If listed species are trapped, the USFWS and the CDFW shall be contacted. d) All vertical tubes used in project construction, such as chain-link fencing poles, shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of birds. e) Project-related vehicles shall observe a 15 mile per hour (mph) speed limit in all project areas, except on county roads and state and federal highways. Construction after sundown shall be prohibited. Off-road traffic outside of designated project areas shall be prohibited. f) All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a day from the construction or project site. g) No pets shall be allowed in project areas during active construction periods. h) The use of herbicides for vegetation control in project areas shall be restricted. No rodenticides shall be used on the project. All uses of such herbicidal compounds shall observe label and other restrictions mandated by the US Environmental Protection Agency, California Department of Food and Agriculture, and federal and state legislation as well as additional project-related restrictions deemed necessary by the CDFW and/or the USFWS. i) No plants or wildlife shall be collected, taken, or removed from the construction areas except as	

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		necessary for project-related vegetation removal or wildlife relocation. **MM 3.3.1g Agency Notification for Presence of Sensitive Species.** During project construction, if foothill yellow-legged frogs or western pond turtles are found within the project area, temporary fencing shall be installed around the perimeter of the ground disturbance zone to prevent individuals from entering the construction zone. If the above species are found within the disturbance zone, work in the vicinity of the animal shall cease until a qualified biologist is on-site to determine the appropriate measures to be taken. Concurrent with this effort, the USFWS and the CDFW shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the sensitive species is observed leaving the site, work in the area can resume. A report shall be prepared by the biologist to document the activities, and a copy of the report shall be submitted to wildlife and resource agency representatives and the City of Yreka	
Impact 3.3.2: Impacts to Riparian Habitat or Sensitive Natural Communities	PS	**MM 3.3.2a Retention of mature trees.** Large trees that are unable to be relocated shall be protected to the extent practicable by contouring the soil around their roots so as to enable them to survive throughout project implementation. **MM 3.3.2b Revegetation with native trees and shrubs.** After soil contouring is complete, trees and shrubs that have been excavated from the site shall be replanted. Since the new stream corridor will be substantially larger than what exists prior to construction, additional trees and shrubs will be planted using nursery stock, and, where practical, willow stakes. These planted trees and shrubs will be watered until such time as they reach the groundwater and are able to survive in a natural state.	LTS
Impact 3.3.3: Impacts to Federally Protected Wetlands	PS	**MM 3.3.3 Wetland Verification.** The project applicant shall ensure that the project will result in no net loss of federally protected waters through impact avoidance, impact	LTS

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		minimization, and/or compensatory mitigation, as determined in CWA Section 404 and 401 permits and/or 1602 Streambed Alteration Agreement. Evidence of compliance with this mitigation measure shall be provided prior to construction and grading activities for the proposed project.	
Impact 3.3.4: Impacts to Wildlife Movement	PS	Implementation of **MM 3.3.1e**	LTS
Impact 3.3.5: Conflict with Local Policies and Ordinances	NI	None required	NI
Impact 3.3.6: Conflict with Conservation Plans	NI	None required	NI
Impact 3.3.7: Special-Status Species Population Impacts	LTS	None required	LTS
Impact 3.3.8: Cumulative Impacts to Special-Status Species	LCC	None required	LCC
Cultural Resources			
Impact 3.4.1: Historic and Prehistoric Resources	PS	**MM 3.4.1** If, during the course of project implementation and/or operations, cultural resources (i.e., prehistoric sites, historic features, isolated artifacts, and features such as concentrations of shell or glass) are discovered, work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department shall be immediately notified, and a professional archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery. The City shall consider mitigation recommendations presented by a professional archaeologist and implement a measure or measures that the City deems feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.	LTS
Impact 3.4.2: Prehistoric Resources and Human Remains	PS	**MM 3.4.2** If, during the course of project implementation and/or operations, human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department	LTS

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
		shall be immediately notified, and the county coroner must be notified, according to Section 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in California Code of Regulations Section 15064.5(d) and (e) shall be followed.	
Impact 3.4.3: Paleontological Resources	PS	**MM 3.4.3** If, during the course of project implementation and/or operations, paleontological resources (e.g., fossils) are discovered, work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department shall be immediately notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. The City shall consider the mitigation recommendations presented by a professional paleontologist and implement a measure or measures that the City deems feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.	LTS
Impact 3.4.4: Cumulative Prehistoric and Historic Resources/Human Remains	CC	Implement mitigation measures **MM 3.4.1** and **MM 3.4.2**.	LCC
Impact 3.4.5: Cumulative Paleontological Resources	CC	Implement mitigation measure **MM 3.4.3.**	LCC
Greenhouse Gases and Climate Change			
Impact 3.5.1: Generation of Greenhouse Gas Emissions	LCC	None required	LCC
Geology and Soils			
Impact 3.6.1: Strong Seismic Ground Shaking and Seismic-Related Ground Failure	LTS	None required	LTS
Impact 3.6.2: Erosion and Loss of Topsoil	LTS	None required	LTS
Impact 3.6.3: Expansive Soils	LTS	None required	LTS

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

Impact	Level of Significance Without Mitigation	Mitigation Measure	Resulting Level of Significance
Impact 3.6.4: Soils Incapable of Adequately Supporting the Use of Septic Tanks	NI	None required	NI
Impact 3.6.5: Cumulative Geologic, Seismic, and Soil Hazards	LCC	None required	LCC
Hydrology and Water Quality			
Impact 3.8.1: Violate Water Quality Standards or Waste Discharge Requirements	LTS	None required	LTS
Impact 3.8.2: Groundwater Recharge	LTS	None required	LTS
Impact 3.8.3: Increased Stormwater Runoff/Altered Drainage Patterns	LTS	None required	LTS
Impact 3.8.4: Flooding Hazards	LTS	None required	LTS
Impact 3.8.5: Dam or Levee Failure Inundation	LTS	None required	LTS
Impact 3.8.6: Tsunami and/or Seiche	NI	None required	NI
Impact 3.8.7: Mudslides, Mudflow Inundation	LTS	None required	NI
Impact 3.8.8: Cumulative Water Quality, Runoff, and Flooding Impacts	LCC	None required	LCC

S – Significant CC – Cumulatively Considerable LTS – Less Than Significant SU – Significant and Unavoidable NI – No Impact
PS – Potentially Significant LCC – Less than Cumulatively Considerable CCU – Cumulatively Considerable and Unavoidable

1.0 – Introduction

1.1 PURPOSE OF THE EIR

This Environmental Impact Report (EIR) was prepared in accordance with and in fulfillment of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. As described in CEQA Guidelines Section 15121(a), an EIR is a public informational document that assesses the potentially significant environmental impacts of a project, identifies ways to minimize the significant impacts, and describes a reasonable range of alternatives to the project. CEQA requires that an EIR be prepared by the agency with primary responsibility over the approval of a project (the lead agency). The City of Yreka (City) is the lead agency for the proposed 2016 Greenway Master Plan (Master Plan) and Flood Hazard Reduction Project (FHR Project). In this EIR, the Master Plan and the FHR Project are collectively termed the proposed project or the project. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development, where feasible, and are obligated to balance a variety of public objectives including economic, environmental, and social factors in their decision-making.

The City of Yreka has determined that an EIR is the appropriate CEQA documentation due to the potential for significant environmental impacts that could result from approval of the requested actions and development of the proposed project. This Draft EIR evaluates the existing environmental resources in the area, analyzes potential impacts on those resources due to the proposed project (particularly as they relate to prior CEQA analyses and clearances), and if necessary, identifies feasible mitigation measures that could avoid or reduce the magnitude of those impacts. This EIR provides an analysis and evaluation of on- and off-site environmental impacts resulting from the construction and operation of the proposed project.

1.2 KNOWN TRUSTEE AND RESPONSIBLE AGENCIES

For the purpose of CEQA, the term *trustee agency* means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of California. In CEQA, the term *responsible agency* includes all public agencies other than the lead agency that may have approval authority in some regard associated with the proposed project. Interested agencies may have a general interest in the proposal with respect to issues germane to their organization. The following agencies have been identified as potential responsible, trustee, or interested agencies with direct or indirect interest in the project:

- California Department of Conservation
- California Department of Transportation, District 2
- California Department of Fish and Wildlife, Region 1
- Native American Heritage Commission
- Regional Water Quality Control Board, Region 1
- Siskiyou County Air Pollution Control District
- State Water Resources Control Board
- US Army Corps of Engineers
- US Fish and Wildlife Service
- US Forest Service

The project may require approvals, permits, or entitlements from these or other public agencies for which this EIR may be used.

1.3 TYPE OF DOCUMENT

CEQA and the CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. Because this EIR essentially has two components—the Greenway Master Plan and the Flood Hazard Reduction Project—this EIR has been prepared as a combination of both a program and a project EIR pursuant to CEQA Guidelines Sections 15161 and 15168.

Program EIRs are defined by the CEQA Guidelines (Section 15168) as:

> [A] series of actions that may be characterized as one large project and may be related either:
>
> 1. Geographically;
> 2. As logical parts in the chain of contemplated actions;
> 3. In connection with the issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program; or
> 4. As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which may be mitigated in similar ways.

Project EIRs are defined by CEQA Guidelines (Section 15161) as:

> The most common type of EIR examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

1.4 INTENDED USE OF THE EIR

This Draft EIR is intended to evaluate the environmental impacts of an update to and implementation of portions of the proposed Yreka Creek 2016 Greenway Master Plan and the FHR Project, which implements specific actions contemplated in the Greenway Master Plan. This EIR in its final form will be used by the City of Yreka in considering approval of the proposed project. In accordance with CEQA Guidelines Section 15126, the EIR will be used as the primary environmental document in consideration of all subsequent planning and permitting actions associated with the project, to the extent such actions require CEQA compliance and as otherwise permitted under applicable law.

1.5 ORGANIZATION AND SCOPE

Sections 15122 through 15132 of the CEQA Guidelines identify content requirements for EIRs. An environmental impact report must include a description of the environmental setting, an environmental impact analysis, feasible mitigation measures, a reasonable range of alternatives, significant irreversible environmental impacts, and growth-inducing and cumulative impacts. The environmental issues addressed in this EIR adhere to state law requirements and were established through review of the existing conditions of the project site, verifiable available online information, discussions with stakeholders and governmental agencies, site visits, responses to the Notice of Preparation, and other available resources, as appropriate. Based on this information, comments received, agency consultation, and review of the project application and other relevant materials, the City, in its discretion, determined the scope for this EIR.

This EIR is organized in the following sections:

ES – EXECUTIVE SUMMARY

This section provides a project narrative and identifies environmental impacts and mitigation measures in a summary table consistent with CEQA Guidelines Section 15123.

SECTION 1.0 – INTRODUCTION

This section provides an overview that describes the intended uses of the EIR, as well as the EIR review and certification process.

SECTION 2.0 – PROJECT DESCRIPTION

This section describes in detail the Greenway Master Plan and the Flood Hazard Reduction Project, including intended objectives, background information, and physical and technical characteristics.

SECTION 3.0 – ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Section 3.0 contains an analysis of environmental topic areas as identified below. Each subsection contains a description of the existing setting of the project area and of the regulatory environment, identifies standards of significance, and identifies project-related and cumulative impacts and recommends mitigation measures.

The major environmental topics are addressed in the following sections:

3.1 Aesthetics
3.2 Air Quality
3.3 Biological Resources
3.4 Cultural Resources
3.5 Greenhouse Gases and Climate Change
3.6 Geology and Soils
3.7 Hazards and Hazardous Materials
3.8 Hydrology and Water Quality
3.9 Effects Found Not to Be Significant

In the course of this evaluation, certain impact areas were found to have a less than significant impact or no impact because the type and location of the proposed project would not create such impacts; therefore, these areas were only discussed briefly. These impact areas include agricultural and forest resources, land use, mineral resources, noise, population and housing, public services, and transportation and circulation. Further discussion as to the reasoning for this determination is included in Section 3.9.

SECTION 4.0 – PROJECT ALTERNATIVES

CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project which could feasibly attain the basic objectives of the project and avoid and/or substantially lessen any of the significant effects of the project. This section discusses alternatives

to the proposed project, including the CEQA mandatory "No Project" alternative, that are intended to avoid or reduce significant environmental impacts of the proposed project.

SECTION 5.0 – OTHER SECTIONS REQUIRED BY CEQA

This section discusses and analyzes various topical issues mandated by CEQA. These topics include significant environmental effects that cannot be avoided if the project is implemented, as well as growth-inducing impacts.

SECTION 6.0 – REPORT PREPARERS

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

APPENDICES

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

1.6 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR will involve the following general procedural steps:

NOTICE OF PREPARATION

In accordance with CEQA Guidelines Section 15082, the City prepared a Notice of Preparation (NOP) of an EIR for the project that was distributed to responsible agencies and the public for a 30-day comment period, beginning on September 16, 2015, and concluding on October 23, 2015. Two public scoping meetings were held on September 23, 2015 at the Yreka City Hall Council Chambers in order to receive additional comments and input from the public as to the scope and content of the EIR. Comments received in response to the NOP were considered during preparation of the EIR. The NOP and comments received from interested parties and agencies are presented in **Appendix 1.0.** Written comments were received from the following parties:

TABLE 1.0-1
LIST OF NOP COMMENT LETTERS AND SUMMARY OF COMMENTS

Interested Party/Agency	Date	Summary of Comment (s)
Karuk Tribe	October 22, 2015	• Stormwater – A description of potential impacts to existing and planned stormwater infrastructure. A list of necessary regulatory permits for the project construction and maintenance plan should be provided to determine if the proper level of review is being conducted. • Flood Potential – A hydrologic analysis should be conducted for the additional proposed reaches to determine increased flood potential to landowners within and adjacent to the project. • Flood Potential – Concern over increase flooding potential due to South Reach improvements on adjacent lands. • Agricultural Resources – Impacts to the tribe's agricultural well located in the greenway corridor, including water quality and quantity. • Trespass – The NOP states that the City will acquire properties from willing property owners. The Karuk Tribe does not wish to sell their property, so alternatives to acquisition should be developed that still achieves project goals. • Trespass – Yreka Creek has been the site of high levels of crime. If public access is increased in the area, the potential impacts to adjacent landowners should be addressed and mitigated. • Cultural Resources – The Karuk Tribe requests that the City formally consult with the Karuk Tribal Historic Preservation Officer. • Transportation and Circulation – A traffic study is needed to accurately define the potential long-term and temporary transportation and circulation impacts.

DRAFT EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and feasible mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. Upon completion of the Draft EIR, the City will file the Notice of Completion (NOC) with the California Office of Planning and Research to begin the public review period (Public Resources Code Section 21161).

PUBLIC NOTICE/PUBLIC REVIEW

Concurrent with the NOC, the City will provide public notice of the availability of the Draft EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties. The public review and comment period is 45 days. Notice of the time and location of any public meetings and hearings will be published prior to the meeting/hearing in accordance with applicable law. All comments or questions regarding the Draft EIR should be addressed to:

Jeanette Hook, Project Manager
City of Yreka
701 Fourth Street
Yreka, CA 96097

Comments may be sent to Ms. Hook via e-mail at hook@ci.Yreka.ca.us

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR (FEIR) will be prepared. The FEIR will respond to all comments received during the public review period that raise significant environmental concerns and may contain revisions to the Draft EIR, if necessary. The Draft EIR, as revised and combined with responses to comments, will constitute the Final EIR.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The City of Yreka Planning Commission will review and make recommendation to the City Council regarding certification of the EIR and action on the proposed project. The City Council will then review and consider the FEIR. If the City finds that the FEIR is "adequate and complete," the City may certify the FEIR. Upon review and consideration of the FEIR, the City may take action to approve, revise, or reject the proposed project. Any decision to approve the project would be accompanied by written findings in accordance with CEQA Guidelines Section 15091 and Section 15093. A Mitigation Monitoring and Reporting Program (MMRP), as described below, must also be adopted for mitigation measures that have been incorporated into or imposed on the project to reduce or avoid significant effects on the environment. The MMRP will be designed to ensure that these measures are enforceable and carried out during project implementation.

MITIGATION MONITORING AND REPORTING PROGRAM

CEQA Section 21081.6(a) requires lead agencies to adopt an MMRP to describe measures that will be adopted and made a condition of project approval in order to mitigate or avoid significant effects on the environment. The specific reporting or monitoring program required by CEQA is not required to be included in the EIR; however, it must be presented to the City Council for adoption. Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate establishment of an MMRP. Any mitigation measures adopted by the City as conditions for approval of the project will be included in an MMRP to ensure enforceability and verify compliance.

One of the goals of the proposed project is to develop a mitigation strategy that can be used to implement later phases of the Yreka Creek Master Plan. The strategy would first comprise the MMRP for the north, central, and southern reaches affected by the Flood Hazard Reduction Project components, and then form the foundation for later construction efforts. Ideally, mitigation included with the proposed project could be applied to later projects, with changes occurring only when warranted by project features or changes in legislation or requirements. By having the mitigation strategy considered, designed into the project (self-mitigating), and accepted by the various state and federal agencies with jurisdiction over the Yreka Creek Greenway, the City hopes that future projects can occur efficiently, which lowers costs and helps to make the most of project funding.

2.0 – Project Description

2.0 PROJECT SUMMARY

The proposed project includes amendments to the Yreka Creek 2016 Greenway Master Plan and the improvements identified as a part of the Flood Hazard Reduction Project, resulting in improved flood control, fish and riparian habitat, and recreational opportunities. This environmental impact report (EIR) evaluates both the policy amendments to the Greenway Master Plan and construction of three of the reaches in Yreka Creek cumulatively known as the Flood Hazard Reduction Project. The combination of the Greenway Master Plan and the Flood Hazard Reduction Project is referred to as the proposed project or the project in this EIR.

For clarification purposes, when discussing the individual components of the proposed project, the Yreka Creek 2016 Greenway Master Plan is referred to individually as the Greenway Master Plan or the Master Plan, while the Flood Hazard Reduction Project is referred to individually as the Flood Hazard Reduction Project or the FHR Project. The individual reaches of the FHR Project are referred to as either the Central Reach, the North Reach, or the South Reach.

2.1 PROJECT SETTING

REGIONAL SETTING

The proposed project is located within and adjacent to the city limits of Yreka, the county seat for Siskiyou County. The city is located approximately 21 miles south of the California-Oregon border along Interstate 5 (I-5). State Route 3 and State Route 263 also connect to I-5 in the city. See **Figures 2.0-1** and **2.0-2**.

The proposed project affects a portion of Yreka Creek in Yreka, located in the Klamath River Basin. The creek is considered an important tributary that flows north to the Shasta River, which flows into the Klamath River below Iron Gate Dam, and finally into the Pacific Ocean. The Yreka Creek subwatershed has a drainage area of 33,453 acres and about 10.5 miles of active stream channel. The Yreka Creek subwatershed was subdivided into 7 drainages and 66 subdrainages. The main channels of Yreka Creek and tributaries were also named for planning purposes. Seven watersheds drain to the creek: Upper Yreka Creek, Middle Yreka Creek, Lower Yreka Creek, Greenhorn Creek, Upper Humbug Creek, Lower Humbug Creek, and Juniper Creek (see **Figure 2.0-3**).

While most of the project lies within the city limits, the Greenway Master Plan also includes a portion of the creek adjacent to the city in the unincorporated area of Siskiyou County. Within the city, the project affects approximately 5.25 miles of Yreka Creek, 1 mile of Greenhorn Creek, and 1.75 miles of Humbug Gulch, as well as various named and unnamed tributaries. Outside of the city, the Master Plan covers 2 miles of Yreka Creek north of the city limits, 0.33 mile of Yreka Creek south of the city limits, and 1.25 miles of Greenhorn Creek west of the city limits. Yreka Creek flows south to north, and Greenhorn Creek and Humbug Gulch flow west to east.

SURROUNDING LAND USES

The portion of Yreka Creek affected by the project flows primarily through developed areas within the city or areas designated for future development. The creek flows along I-5 for much of its length in the city and is adjacent to residential, commercial, industrial, and public land uses. Both public and private landowners border the creek, including property owned by the Klamath National Forest, which is used as a maintenance and staging facility (as opposed to a Ranger District headquarters, offices or other space).

2.2 PROJECT OBJECTIVES

The project's primary objective is to reduce flood hazards throughout the city. Through careful design, other objectives such as an ecologically restored and protected network of stream-based open space corridors, trails, and associated recreational and transportation-related facilities will also be met.

1) Reduce flood hazards throughout the city by containing floodwaters within greenway corridors to the greatest extent feasible.

2) Reduce water quality impacts from urban runoff entering Yreka Creek and its tributaries.

3) Restore and protect fish and wildlife habitat, and more effectively integrate this habitat into the urban landscape.

4) Provide a network of trails and related facilities for non-motorized transportation connectivity, recreation, exercise, tourism, emergency access, and related overall economic vitality.

5) Incorporate interpretive and educational opportunities.

6) Reduce use of stream corridors by transients in order to improve security, reduce litter and sanitary problems, and reduce impacts on adjacent businesses and residences.

2.3 PROJECT DESCRIPTION

NEED

In the past, heavy rains have caused the water level in Yreka Creek to rise well above the creek's existing streambanks and floodway, resulting in flood damage to adjacent buildings along the creek. There is a need to consider modifications to the creek floodway to reduce the potential for adjacent flooding. Much of the community is within the 100-year mapped floodplain, a classification which is anticipated to be revised (reduced) through the project implementation.

The creek has some physical impediments and other obstacles to various anadromous stocks that affect listed species. There is a need to reconfigure portions of the creek to allow better access and flow characteristics for anadromous stocks.

There is also a need to expand on the existing 2005 Greenway Master Plan to meet higher water quality standards in the creek.

PROJECT COMPONENTS

The proposed project includes two components: (1) the 2016 Greenway Master Plan and (2) three specific projects within the Master Plan. Because of the two project components, this EIR analyzes the project's environmental impacts using two different analysis methods:

1) The overall 2016 Greenway Master Plan is analyzed as a program EIR using a broader spectrum based on requirements outlined in California Environmental Quality Act (CEQA) Guidelines Section 15168.

2) A project-level analysis is prepared for the three proposed projects of the Master Plan—Central Reach, North Reach, and South Reach—using a project-specific analysis based on the requirements of CEQA Guidelines Section 15161.

2016 GREENWAY MASTER PLAN

The 2016 Greenway Master Plan expands the area of the current 2005 Master Plan with a focus on the reduction of flood hazards throughout the city by containing floodwaters within greenway corridors. **Figure 2.0-4** illustrates the extent of the 2016 Greenway Master Plan area. In addition to flood control, the expanded greenway corridors will result in drainages kept in a more natural state, which helps improve water quality, and the provision of areas for recreation such as trails and open space.

The purpose of the Greenway Master Plan update is to build on the previous plan. The updated plan also includes provisions to:

- Enhance fish and wildlife habitat.
- Provide educational/interpretive opportunities.
- Develop recreational and multi-modal transportation opportunities.
- Improve law enforcement and public security.
- Encourage land and easement acquisition.
- Contribute to the recovery of coho salmon under the Endangered Species Act.
- Develop a new approach to urban stream restoration that also achieves substantial flood hazard reduction and water quality improvement benefits while also incorporating greenway trails.
- Support urban stormwater management along small tributary drainages that yield cumulative flood hazard, water quality, and wildlife habitat benefits.
- Increase opportunities for trail linkages to schools, places of work, and residential areas.

The updated Master Plan provides guidance for creating enhancements that will greatly reduce flood hazards, improve water quality, and restore fish and wildlife habitat along approximately 15 miles of Yreka, Greenhorn, Little Humbug, and Juniper creeks. The Master Plan's benefits will extend further into ephemeral drainages and bioswales for another 10 miles. The resulting network of drainage corridors will total nearly 24 miles and will help coho salmon, Klamath steelhead, trout, and other species.

The Master Plan's primary planning area consists of stream corridors and other drainage routes and associated 100-year flood zones in the Yreka Creek watershed that are within or adjacent to Yreka. Named streams consist of Yreka Creek, Greenhorn Creek, Little Humbug Creek, and Juniper Creek. In addition, seven small unnamed drainages are cumulatively significant to Greenway Master Plan goals. To a lesser extent, the planning area also considers stream corridors elsewhere in the Yreka Creek watershed that are outside City jurisdiction in order to assess their relationship to the goals.

The improvements identified in the Master Plan are very extensive. According to the Master Plan, completion of the improvements identified in the plan may take 20 years or more.

REACHES

The proposed project encompasses Yreka Creek and tributaries and includes 46 areas called "reaches." Each reach is defined as a stream or other drainage area with proposed improvements.

The reaches in the Master Plan were determined on the following basis:

- Being in or near developed areas
- Having the potential to contribute significantly to Master Plan goals
- Having similar features along a given length
- Keeping the length to a manageable size (under 0.75 mile)
- Including smaller drainages that are still topographically significant as drainage routes

Reaches were also classified on the basis of whether they were perennial (Type 1), intermittent (Type 2), or ephemeral (Type 3). An "a" designation indicates that trails are intended as part of the improvements, while a "b" designation indicates improvements without trails. **Table 2.0-1** illustrates the attributes and future improvements for the individual reaches in the 2016 Greenway Master Plan. Those reaches in **Table 2.0-1** are future projects and are considered under the cumulative analysis in this EIR.

TABLE 2.0-1
ATTRIBUTES OF FUTURE PROJECT REACHES

Reach	Type	Anticipated Completion Date	Stream Miles	Major Drainage Swale Miles	Large Retention Basins	Small Basins & Ponds	Greenway Acres	Additional Floodway Acres	Spoils Acres	Main Trail Miles	Secondary Trail Miles	New Trail Bridges	New Boardwalks	New Road & Driveway Miles	New Parking Areas	Reconfigured Parking Areas	Upgraded Road Crossings	New Culverts	Affected Public Owners	Pending Acquisitions	Affected Commercial Property Owners	Affected Large Resident Owners	Affected Small Resident Owners	Houses & Main Bldgs. to Be Moved	Outbuildings to Be Moved	Small Sheds to Be Moved	Storage Yards to Be Moved
Yreka Creek Reaches Completed or Pending																											
North Yreka Creek Reach	1a	2015	0.4	0.0	0	0	5	0	0	0.3	0.0	0	0	0.0	1	0	0	0	1	0	0	0	0	0	0	0	0
Oberlin-Young Reach	1a	2016	0.4	0.0	0	0	13	0	10	0.4	0.5	3	4	0.2	1	0	0	0	1	0	3	0	0	0	0	0	1
FHR Reaches Remaining Attributes (these attributes are not a part of the FHR project)																											
Central Reach	1a	2020	0.2	0.0	0	0	4	0	2	0.2	0.0	0	0	0.1	0	2	1	2	2	0	0	0	0	0	5	1	1
North Reach	1a	2024	0.5	0.3	0	0	15	0	13	0.5	0.1	0	1	0.2	0	0	1	4	2	1	3	0	6	0	0	1	1
South Reach	1a	2023	0.6	0.2	0	0	31	0	16	0.7	0.1	1	1	0.0	0	0	1	0	2	2	4	0	0	0	2	6	1
Yreka Creek Remaining Reaches																											
Foothill Drive Reach	1a	2020	0.0	0.0	0	0	0	0	2	0.0	0.9	0	0	0.0	0	0	0	0	2	0	1	0	0	0	0	0	0
Miner-Lennox Reach (Eastside portion)	1a	2020	0.3	0.0	0	0	8	0	4	0.4	0.4	0	0	0.0	1	1	2	0	2	0	5	0	4	3	1	1	1
Lower Yreka Creek Phase 1 Reach	1a	2030	0.6	0.0	0	0	50	0	8	0.6	0.9	0	1	0.0	1	0	1	0	1	0	1	0	1	0	1	0	1
Lower Yreka Creek Phase 2 Reach	1a	2030	1.0	0.0	0	0	69	0	6	1.0	1.0	0	0	0.0	0	0	0	0	0	0	3	0	0	2	3	6	2
Lower Yreka Creek Phase 3 Reach	1a	2030	0.4	0.0	0	0	26	0	2	0.6	0.5	0	0	0.0	0	0	0	0	0	0	1	0	0	0	0	1	0
Wastewater Ponds Reach	1a	2030	0.5	0.0	0	5	13	21	4	0.2	0.3	1	1	0.0	0	0	0	5	2	0	0	0	0	0	0	1	1
Wastewater Disposal Reach	1a	2030	0.7	0.0	0	0	51	0	0	0.7	0.5	0	2	0.0	1	0	1	0	2	0	3	0	3	0	1	3	3
County Offices Reach	1a	2035	0.2	0.0	0	0	3	0	2	0.2	0.0	0	0	0.1	0	2	2	0	2	0	1	0	3	0	0	1	0
State-Raymond Reach	1a	2035	0.2	0.0	0	0	3	0	0	0.2	0.0	2	0	0.0	0	1	0	0	1	1	4	0	4	3	2	0	1
Raymond-Miner Reach	1a	2035	0.2	0.0	0	0	3	0	1	0.2	0.2	1	1	0.0	0	0	1	0	2	0	3	0	1	0	4	0	2
Miner-Lennox Reach (Westside portion)	1a	2035	0.3	0.0	0	0	8	0	4	0.4	0.4	0	0	0.0	1	1	2	0	2	0	5	0	4	3	1	1	1
Fairgrounds Reach	1a/2a	2035	0.9	0.0	0	0	15	19	15	0.6	1.0	2	0	0.0	1	1	6	0	3	0	1	0	4	0	2	0	3
Yreka Junction Reach	1a	2035	0.6	0.0	0	0	23	0	32	0.7	0.3	0	0	0.0	1	0	0	1	2	0	7	0	0	0	0	0	0
Westside Road Reach	1a	2035	0.9	0.0	0	0	98	0	0	0.7	0.2	0	0	0.0	0	0	0	0	2	0	1	3	5	0	0	2	0
Greenhorn Creek Reaches Completed																											
Upper Greenhorn Phase 1 Reach	1a	2012	0.3	0.0	0	0	8	0	4	0.4	0.1	2	0	0.2	0	0	0	0	1	0	0	0	0	0	0	0	0
Greenhorn Reaches Previously Designed																											
Upper Greenhorn Phase 2 Reach	1a	2020	0.3	0.6	0	2	17	0	3	0.6	0.2	0	2	0.2	0	0	0	4	1	0	0	0	2	0	0	0	0
Upper Greenhorn Phase 3 Reach	1a	2020	0.5	0.6		1	16	0	6	0.9	0.1	0	0	0.5	0	0	0	4	1	0	0	0	2	0	0	0	0
Greenhorn Creek Remaining Reaches																											
Lower Greenhorn Reach	1a	2025	0.7	0.0	0	0	9	0	4	0.6	0.6	2	1	0.0	0	0	1	0	2	0	7	0	0	0	2	0	3
Upper Greenhorn Pasture Reach (PLA)	1a	2020	0.0	0.0	0	0	7	0	0	0.0	0.0	0	0	0.2	0	0	0	0	1	0	0	2	0	0	0	0	1

Reach	Type	Anticipated Completion Date	Stream Miles	Major Drainage Swale Miles	Large Retention Basins	Small Basins & Ponds	Greenway Acres	Additional Floodway Acres	Spoils Acres	Main Trail Miles	Secondary Trail Miles	New Trail Bridges	New Boardwalks	New Road & Driveway Miles	New Parking Areas	Reconfigured Parking Areas	Upgraded Road Crossings	New Culverts	Affected Public Owners	Pending Acquisitions	Affected Commercial Property Owners	Affected Large Resident Owners	Affected Small Resident Owners	Houses & Main Bldgs. to Be Moved	Outbuildings to Be Moved	Small Sheds to Be Moved	Storage Yards to Be Moved
Greenhorn Falls Reach	1a	2020	0.7	0.0	0	0	21	0	3	1.3	0.1	1	1	0.0	2	0	1	0	1	0	0		0	0	0	0	0
Greenhorn Reservoir Reach	1a	2025	0.1	0.0	1	0	29	0	0	1.0	0.1	1	2	0.0	0	0	0	0	1	0	0	0	0	0	0	0	0
Little Humbug Creek Reaches																											
Gold Street Garden Reach	2a	2018	0.1	0.0	0	0	1	0	0	0.0	0.0	0	0	0.0	0	0	0	0	1	0	0	0	0	0	0	0	0
Miner Street Park Reach	2a	2025	0.2	0.0	0	0	1	0	0	0.2	0.0	0	0	0.1	1	1	3	0	1	0	0	0	5	0	0	0	0
Upper Humbug Hollow Reach	2a	2025	0.6	0.3	0	3	16	0	5	0.4	0.0	0	1	0.0	0	0	0	0	0	0	1	2	7	0	0	1	0
Lower Humbug Hollow Reach	2a	2025	0.3	0.1	0	0	3	0	1	0.2	0.0	1	0	0.0	0	0	3	0	1	0	0	0	15	1	1	4	0
Gold Street School Reach	2a/2b	2030	0.3	0.1	0	0	2	0	1	0.0	0.0	0	0	0.1	0	1	4	0	2	0	0	0	16	0	7	6	0
Miner-North Reach	2b	2035	0.2	0.0	0	0	1	0	0	0.0	0.0	0	0	0.0	0	0	3	0	1	0	0	0	19	4	2	8	0
Lower Humbug Reach	2b/3a	2035	0.3	0.1	0	0	2	0	0	0.0	0.0	0	0	0.0	0	3	3	2	1	0	4	0	20	3	6	9	0
Juniper Creek Reaches																											
Mid-Juniper Creek Phase 1 Reach	2b	2035+	0.6	0.0	0	0	6	0	5	0.0	0.0	0	0	0.0	0	1	5	0	2	0	9	3	8	0	0	5	7
Mid-Juniper Creek Phase 2 Reach	2b	2035+	0.8	0.0	0	0	10	0	3	0.0	0.0	0	0	0.1	0	0	5	0	2	0	7	3	8	0	0	4	6
East Oberlin Drainage																											
Lower East Oberlin Reach	3a	2025	0.0	0.8	0	1	8	0	0	0.8	0.0	2	1	0.0	0	0	0	1	1	0	8	0	0	0	0	0	0
Upper East Oberlin Reach	3b/3a	2035+	0.0	1.0	0	2	8	0	1	0.0	0.3	0	1	0.0	0	0	0	1	2	0	0	1	32	0	1	8	0
Small Westside Tributary Drainages																											
Jackson/Evergreen Schools Reach	3a	2025	0.0	0.4	1	1	10	0	1	1.0	0.0	0	3	0.0	0	0	0	8	4	0	0	0	1	0	0	0	0
High School/Community Center Reach	3a	2025	0.0	1.4	0	3	15	0	6	0.7	0.1	4	0	0.0	0	2	0	10	2	0	3	1	2	0	0	0	1
Ringe Park/Stadium Reach	3a	2035	0.0	0.4	1	2	4	0	0	0.4	0.0	0	0	0.0	0	1	0	6	2	0	1	0	0	0	0	0	0
City Hall Tie-in Reach	3a	2035	0.0	0.1	0	1	1	0	0	0.2	0.0	0	0	0.1	0	2	0	7	2	0	6	0	0	3	2	0	0
Lower Lane-Miner Reach	3b	2035+	0.0	0.3	0	0	2	0	0	0.0	0.0	0	0	0.0	0	0	0	1	1	0	0	0	22	0	0	4	0
Upper Lane-Miner Reach	3b	2035+	0.0	0.3	0	0	2	0	0	0.0	0.0	0	0	0.0	0	0	0	3	1	0	0	0	14	0	0	0	0
Lower North-Yama Reach	3b	2035+	0.0	0.3	0	0	1	0	0	0.0	0.0	0	0	0.0	0	0	0	0	1	0	0	0	21	0	0	4	0
Upper North-Yama Reach	3b	2035+	0.0	0.3	0	0	1	0	0	0.0	0.0	0	0	0.0	0	0	0	4	1	0	1	0	23	0	0	5	0
Lower Cedar-Terrace Reach	3b	2035+	0.0	0.3	0	0	2	0	0	0.0	0.0	0	0	0.0	0	0	0	0	1	0	0	0	20	0	0	0	0
Upper Cedar-Terrace Reach	3b	2035+	0.0	0.1	0	1	1	0	0	0.0	0.0	0	0	0.0	0	0	0	1	1	0	0	1	11	0	0	0	0
Total			**14.9**	**8**	**3**	**22**	**642**	**40**	**164**	**17.3**	**8.9**	**23**	**23**	**2.1**	**11**	**19**	**46**	**64**	**69**	**4**	**93**	**16**	**283**	**22**	**43**	**82**	**37**

FLOOD HAZARD REDUCTION PROJECT

The construction of improvements for three of the reaches—Central, North, and South—is included in the Flood Hazard Reduction (FHR) grant from the California Department of Water Resources (DWR). The improvements for all three reaches include:

- Widening the Yreka Creek channel.
- Excavating the existing area directly adjacent to the creek in order to lower the ground level, which would allow for better flood control.
- Providing overflow floodwater channels.
- Placing the removed soils (spoils) to raise the adjacent areas out of the floodway.
- Providing an expanded trail system.
- Providing expanded greenways.

In addition to the improvements listed above, the three individual projects of the FHR Project—Central Reach, North Reach, and South Reach—all have specific project components. These components are discussed in detail below.

Central Reach

Location and Improvements

The Central Reach, which comprises approximately 16 acres, has the highest priority of the three reaches. The Central Reach includes an area of the creek adjacent to the Klamath National Forest (KNF) Yreka Service Center and the Siskiyou County Museum. Improvements to the Central Reach will occur on both sides of the creek and include Yreka Creek channel and bank modifications, vegetation, and new stormwater management improvements. These improvements are anticipated to be completed by the end of 2018. See **Figure 2.0-5.** As shown in **Table 2.0-2,** the Central Reach of the FHR Project involves the widening/lowering of approximately 4.4 acres of floodplain, involving approximately 89,000 cubic yards of earth moving. While much of the spoils will be used on-site to raise areas out of the floodplain, approximately 25,000 cubic yards will be used off-site at nearby locations. Work in the Central Reach also includes the reconstruction of 379 feet of replacement maintenance roadway and the reconfiguration of two parking areas. Three KNF buildings will be removed, and will be rebuilt on the KNF Service Center site out of the floodplain.

The 100-year flood width is reduced by 50 percent. Completion of the Central Reach project will result in 4 acres of greenway. All of the KNF Service Center on the west side of the creek and the retained portion on the east side of the creek would out of the 100-year flood zone. The 100-year flood height at this location is reduced by several feet.

TABLE 2.0-2
CENTRAL REACH IMPROVEMENTS

Item	Amount	Item	Amount
Completion Date	2018	Buildings to Be Moved	3
Affected Stream Area	0.2 mile	New Overflow Channel	722 linear feet
Floodplain Widening/Lowering	4.4 ac 89,000 yd^3	Road Replacement (Maintenance)	379 linear feet
Greenway	4 ac	Parking Areas	2
Creek Channel		Drainage Channel	
Retain	485 linear feet	Retain	0
New	609 linear feet	New	455 linear feet
Convert to Overflow	601 linear feet	Fill	0
Spoils Disposal		Asphalt Paving	
On-site	1.8 ac 31,000 yd^3	Remove	1.5 ac 589 yd^3
Off-site	25,000 yd^3	New	0.8 ac

Construction Timing

Construction is anticipated to start during the late spring of 2017 and last until the rainy season starts in October (work in and after October may be feasible if conditions permit). At the end of the wet weather, anticipated to be in late spring, the project will resume in 2018. Completion of the project is anticipated to occur in the late summer/early fall of 2018. Construction timing by improvement/process is shown in **Table 2.0-3.**

TABLE 2.0-3
CENTRAL REACH IMPROVEMENTS – CONSTRUCTION TIMING

	2017					2018		
	May	June	July	Aug	Sept	May	June	July
Project Startup								
Vegetation Removal								
Creek Bank Improvements								
Floodplain Widening								
Creek Channel Improvements								
KNF Building Removal								
KNF Building Construction								
Vegetation Replanting								
Vegetation Monitoring								

Construction Workers and Equipment

Construction equipment will include four or five 20-yard scrapers, one excavator, one front-end loader, one dozer, and five to seven 10-yard dump trucks. It is anticipated that the project will involve 15 to 20 construction workers; the daily average will be 15 workers.

Staging Areas

Parking of large equipment will occur on-site until construction is complete. Large equipment will be kept on the site that piece of equipment is no longer needed. Construction workers will park either within a designated parking area on-site or on the surrounding streets.

Creek Channel Improvements

The improvements to the floodway for the Central Reach would be accomplished through widening the creek channel, requiring the excavation of 1,000 cubic yards of soil. No deepening of the creek is planned. Two areas of the existing creek bed in the Central Reach will be realigned to improve sinuosity, totaling about 609 linear feet.[1] The new channel will not be any lower than the existing channel. Soils excavated from the new channel will be used as fill to bring the existing channel to the new floodplain height. All creek rerouting will only be done when the creek is dry. Additionally, construction best management practices for erosion and sediment control will be used throughout the life of the construction to reduce possible water quality impacts and for dust control.

As a floodplain lowering/widening project, the reduction in flood height and velocity will improve water quality and riparian habitat, which will benefit fish habitat. Channel rerouting will also improve fish habitat, since it will improve and stabilize stream geomorphology. Instream structures, including boulder structures and large woody debris, may also be included in the creek for fish habitat and channel stability.

Creek Bank Improvements

The existing floodplain will be lowered approximately 8 to 10 feet to create a new readily accessible floodplain about 2 feet above the elevation of the stream channel (termed bankfull height). Earthwork is anticipated to result in 4.4 acres of impacted area. This will result in the excavation of approximately 89,000 cubic yards of soil; the work is anticipated to last several weeks.

The excavated soil (spoils) will be moved to areas now occupied by KNF buildings or to adjacent properties, in order to raise these areas out of the floodplain where the replacement buildings will be located. Once excavation is complete, the excavated areas will be replanted and trails will be constructed.

As stated previously, construction best management practices for erosion and sediment control will be used throughout the life of the construction to reduce possible water quality impacts and for dust control.

Vegetation

The intent of the project is to protect existing native riparian trees and vegetation. When trees or vegetation must be removed to accommodate the improvement, new native trees or vegetation will be planted. For the areas of the creek that will be realigned, riparian vegetation will be avoided or transplanted along the new creek channel. Improvements in the Central Reach will include the removal of approximately 0.5 acre of vegetation, including approximately 50 trees of

[1] A waterway's sinuosity is its tendency to move back and forth across its floodplain, in an S-shaped pattern, over time.

mostly small conifer and non-native species. Vegetation that cannot be replanted will be chipped or burned on-site.

In order to protect the creek during excavation of the creek bank areas, vegetation will be removed, saved, and cared for at an undisturbed location within the reach prior to any excavation. This vegetation will then be replanted within the newly contoured area. The creek and its immediate riparian zone will be avoided, and an excavator will be used to pull spoils away from the creek. Also, it is anticipated that the creek will likely be dry during the work.

Man-Made Storm Drainage Improvements

Development of the Central Reach project will include improvements to the existing man-made drainage facilities. The Klamath National Forest area has two existing culverts that drain into Yreka Creek on the west side. One culvert will be left unchanged, while the other will have a bioswale installed between the existing outlet and the creek. Additionally, an existing California Department of Transportation (Caltrans) culvert for I-5 drains into the creek on the east side. This culvert will be shortened commensurate with floodplain widening and lowering, and its new outlet will drain into an overflow channel functioning as a bioswale before entering the creek.

Klamath National Forest Facilities

On both sides of Yreka Creek are facilities owned by the KNF. The facilities on the east side of Yreka Creek consist of six buildings with a total area of 10,410 square feet. As part of the Central Reach improvements, three KNF buildings, approximately 4,275 square feet in total, will be removed. One of these buildings, approximately 3,300 square feet, will be rebuilt on the KNF property on the west side of the creek. The foundations, retaining walls, and asphalt roadway and parking areas will be left and will be removed during project excavation. The amount of asphalt material to be removed is approximately 589 cubic yards. The amount of concrete (retaining walls) to be removed is approximately 440 cubic yards.

North Reach

Location and Improvements

The North Reach project area is approximately 0.5 mile in length. It starts at the E. Lennox Street Bridge and runs north to the northern border of the City's firefighter training area. The North Reach connects to the Miner-Lennox Reach of Humbug Creek on the south and the North Yreka Creek Reach on the north. The North Reach project area is approximately 25 acres. See **Figure 2.0-6.** As shown in **Table 2.0-4,** the North Reach project involves the creation of 0.3 mile of major drainage swales and 15 acres of greenway. The North Reach project would also include the construction of 1,197 linear feet of new maintenance roadway. No buildings will be removed as a result of the North Reach improvements.

The implementation of the FHR project at the North Reach will result in a 50 percent reduction of the flood width just downstream from the mouth of Little Humbug Creek. The 100-year flood height would be reduced by approximately 3.1 feet on average.

Additional benefits on the North Reach will be achieved in the future by increasing road crossing capacity at Lennox Street.

TABLE 2.0-4
NORTH REACH IMPROVEMENTS

Item	Amount	Item	Amount
Completion Date	2020	Buildings to be Moved	0
Affected Stream Area	0.5 mile	New Overflow Channel	2,710 linear feet
Floodplain Widening/Lowering	13.4 ac 89,000 yd^3	New Road (Maintenance)	1,197 linear feet
Greenway	15 ac	Major Drainage Swales	0.3 mile
Creek Channel		Drainage Channel	
Retain	2,888 linear feet	Retain	384 linear feet
New	0	New	57 linear feet
Convert to Overflow	0	Fill	166 linear feet
Spoils Disposal		Small Retention Basins	
On-site	12.8 ac 89,000 yd^3	Existing	1,091 sq. ft.
Off-site	0	New	3,766 sq. ft.

As with the Central Reach, the improvements to the floodway for the North Reach would be accomplished through widening the creek channel, lowering the existing area adjacent to the creek, and providing overflow channels.

Construction Timing

Construction is anticipated to start during the late spring of 2018 and last until the rainy season starts in October. At the end of the wet weather, anticipated to be in late spring, the project will resume in 2019. Completion of the project is anticipated to occur in the late summer/early fall of 2019. Construction timing by improvement/process is shown in **Table 2.0-5**.

TABLE 2.0-5
NORTH REACH IMPROVEMENTS – CONSTRUCTION TIMING

	2018					2019		
	May	June	July	Aug	Sept	May	June	July
Project Startup								
Vegetation Removal								
Creek Bank Improvements								
Floodplain Widening								
Creek Channel Improvements								
Vegetation Replanting								
Vegetation Monitoring								

Construction Workers and Equipment

As with the Central Reach, construction equipment for the North Reach will include four or five 20-yard scrapers, one excavator, one front-end loader, one dozer, and five to seven 10-yard dump

trucks. It is anticipated that the project will involve 15 to 20 construction workers; the daily average will be 15 workers.

Staging Areas

Parking of large equipment will occur on-site until construction is completed. Large equipment will be kept on the site until that piece of equipment is no longer needed. Construction workers will park either within a designated parking area on-site or on the surrounding streets.

Creek Channel Improvements

The improvements to the floodway for the North Reach would be accomplished through widening the creek channel, requiring the excavation of 450 cubic yards of soil. No deepening of the creek is planned. The new channel will not be any lower than the existing channel. Soils excavated from the new channel will be used as fill to bring the existing channel to the new floodplain height. Because this portion of the creek is perennial, protection of the creek's biological resources during creek rerouting would involve the following sequence:

- Lowering/widening the North Reach floodplain.
- Constructing a new channel at the reroute site, including instream structures and a clean cobble/gravel channel bottom.
- Placing spoils near the old channel for subsequent filling of the old channel when ready.
- Transplanting selected herbaceous plants, shrubs, and sapling trees from the old channel banks to the new channel banks, while avoiding water quality impacts to the old channel.
- Planting native propagated plants along the new streambanks.
- Connecting to the old channel at the downstream end of the new channel.
- Removing the narrow "dam" of existing soil left at the upstream end of the new channel and placing sandbags in the old channel, thereby redirecting flow to the new channel.
- Retrieving fish, amphibians, and invertebrates that become stranded as water in the old channel drains out, and placing these organisms into the new channel.
- Filling the old channel with stockpiled spoils, retaining riparian vegetation located at the new floodplain height.
- Completing the streambank construction/armoring/replanting at the upstream end of the filled old channel.

Additionally, construction best management practices for erosion and sediment control will be used through the life of the construction to reduce possible water quality impacts and for dust control.

Once the floodplain lowering/widening project is complete, the reduction in flood height and velocity will improve water quality and riparian habitat, which will benefit fish habitat. Channel rerouting will also improve fish habitat, since this will improve and stabilize stream geomorphology.

Instream structures, including boulder structures and large woody debris, may also be included in the creek for fish habitat and channel stability.

Creek Bank Improvements

The floodplain will be lowered approximately 8 feet to create a new readily accessible floodplain, resulting in 2-foot bankfull height. Earthwork is anticipated to result in 13.4 acres of impacted area. This will result in the excavation of approximately 89,000 cubic yards of soil, which will be moved to adjacent undeveloped commercial properties where placement of spoils will lift those properties out of the 100-year flood zone. Excavation work is anticipated to last two months.

In order to protect the creek during excavation of the creek bank areas, vegetation will be removed and saved for replanting prior to any excavation. The creek and its immediate riparian zone will be avoided, and an excavator will be used to pull spoils away from the creek.

Vegetation

Removal of existing vegetation will be completed prior to excavation. The majority of this vegetation will be saved and maintained within the reach and then replanted at the new floodplain elevation. However, about 1.5 acres of riparian areas with shrubs, vines (like Himalayan blackberry), and trees will be removed. Most native riparian trees will be avoided because they grow at lower grades close to the water table and the creek. Other large trees (such as two large oaks on the site) will be saved by creating mounds where they occur in the lowered floodplain. Vegetation that cannot be replanted will be chipped or burned on-site. Any large logs (greater than 12 inches in diameter) will be scattered and anchored in the new floodplain to provide roughness and habitat. Some logs may be used as large woody debris for instream structures.

Man-Made Storm Drainage Improvements

Development of the North Reach project will include improvements to the existing man-made drainage facilities in the reach. Three Caltrans culverts from I-5 drain into the creek from the east. These culverts will be shortened commensurate with floodplain widening and lowering. The new outlets will drain into overflow channels functioning as bioswales before entering creek. Additionally, there are four large City-owned culverts and a large valley gutter draining near the creek and flowing overland to the creek on the west side. Bioswales will be constructed between these culverts and valley gutter outlets and the creek.

South Reach

Location and Improvements

The South Reach project of Yreka Creek is approximately 0.6 mile in length. It starts on Sharps Road and follows the creek north to Oberlin Road where it connects to the Oberlin-Young Reach. The South Reach project area is the largest of the three projects and is approximately 70 acres. Improvements in the South Reach would result in a 100-year flood height reduction of approximately 3.4 feet on average, with the 100-year flood width reduced by 50 to 80 percent. It is a goal of the proposed project that improvements in the South Reach would remove the Waiiaka RV/Mobile Home Park and the County Fairgrounds buildings from the 100-year flood zone. Additional benefits on the South Reach will be achieved in the future by increasing road crossing capacity at Sharps and Oberlin roads. See **Figure 2.0-7.** As shown in **Table 2.0-6,** the South Reach project involves the creation of 31 acres of greenway.

TABLE 2.0-6
SOUTH REACH IMPROVEMENTS

Item	Amount	Item	Amount
Completion Date	2020	Greenway	31 ac
Affected Stream Area	0.6 mile	New Overflow Channel	1,882 linear feet
Floodplain Widening/Lowering	16.9 ac 163,000 yd^3	Major Drainage Swales	0.2 mile
Additional Floodplain Widening	10.7 ac 138,000 yd^3	Drainage Channel	
Creek Channel		Retain	1,996 linear feet
Retain	2,615 linear feet	New	526 linear feet
New	846 linear feet	Fill	664 linear feet
Convert to Overflow	738 linear feet		
Spoils Disposal			
On-site	16.0 ac 151,000 yd^3		
Off-site	150,000 yd^3		

Construction Timing

Construction is anticipated to start during the late spring of 2018 and last until the rainy season starts in October. At the end of the wet weather, anticipated to be in late spring, the project will resume in 2019. Completion of the project is anticipated to occur in the late summer/early fall of 2019. Construction timing by improvement/process is shown in **Table 2.0-7**.

TABLE 2.0-7
SOUTH REACH IMPROVEMENTS – CONSTRUCTION TIMING

	2018					2019		
	May	June	July	Aug	Sept	May	June	July
Project Startup								
Vegetation Removal								
Creek Bank Improvements								
Floodplain Widening								
Creek Channel Improvements								
Vegetation Replanting								
Vegetation Monitoring								

Construction Workers and Equipment

As with the Central Reach, construction equipment for the South Reach will include four or five 20-yard scrapers, one excavator, one front-end loader, one dozer, and five to seven 10-yard dump trucks. It is anticipated that the project will involve 15 to 20 construction workers; the daily average will be 15 workers.

Staging Areas

Parking of large equipment will occur on-site until construction is completed. Large equipment kept on the site until that piece of equipment is no longer needed. Construction workers will park either within a designated parking area on-site or on the surrounding streets.

Creek Channel Improvements

The improvements to the floodway for the South Reach would be accomplished through widening the creek channel, requiring the excavation of 1,000 cubic yards of soil. No deepening of the creek is planned; however, three areas of the existing creek may be rerouted to improve sinuosity totaling about 941 linear feet in length. The new channel will not be any lower than the existing channel. Soils excavated from the new channel will be used as fill to bring the existing channel to the new floodplain height. If Yreka Creek is flowing through this reach during construction, protection of the creek's biological resources during creek rerouting would involve the following sequence:

- Lowering/widening the South Reach floodplain.
- Constructing a new channel at the reroute site, including instream structures and a clean cobble/gravel channel bottom.
- Placing spoils near the old channel for subsequent filling of the old channel when ready.
- Transplanting selected herbaceous plants, shrubs, and sapling trees from the old channel banks to the new channel banks, while avoiding water quality impacts to the old channel.
- Planting native propagated plants along the new streambanks.
- Connecting the old channel at the downstream end of the new channel.
- Removing the narrow "dam" of existing soil left at the upstream end of the new channel and placing sandbags in the old channel, thereby redirecting flow to the new channel.
- Retrieving fish, amphibians, and invertebrates that become stranded as water in the old channel drains out, and placing these organisms into the new channel.
- Filling the old channel with stockpiled spoils, retaining riparian vegetation located at the new floodplain height.
- Completing the streambank construction/armoring/replanting at the upstream end of the filled old channel.

Additionally, construction best management practices for erosion and sediment control will be used through the life of the construction to reduce possible water quality impacts and for dust control.

Once the floodplain lowering/widening project is complete, the reduction in flood height and velocity will improve water quality and riparian habitat, which will benefit fish habitat. Channel rerouting will also improve fish habitat, since this will improve and stabilize stream geomorphology. Instream structures, including boulder structures and large woody debris, may also be included in the creek for fish habitat and channel stability.

Creek Bank Improvements

The floodplain will be lowered approximately 6 feet to create a new readily accessible floodplain, resulting in 2-foot bankfull height. Earthwork is anticipated to result in 16.9 to 27.6 acres of impacted area. This will result in the excavation of approximately 163,000 to 301,000 cubic yards of soil, depending on the width of the Johnson parcel portion of the floodplain lowering/widening. This soil will then be moved to adjacent undeveloped commercial properties where placement of spoils will lift those properties out of the 100-year flood zone. Excavation work is anticipated to last two months.

As with the Central and North reaches, in order to protect the creek during excavation of the creek bank areas, vegetation will be removed and saved for replanting prior to any excavation. The creek and its immediate riparian zone will be avoided, and an excavator will be used to pull spoils away from the creek.

Vegetation

As with the Central and North reaches, removal of existing vegetation will be completed prior to excavation. The majority of this vegetation will be saved and maintained on-site and then replanted at the new floodplain elevation. However, about 2.5 acres of riparian areas with shrubs, vines (like Himalayan blackberry), and trees will be removed. Most native riparian trees will be avoided because they grow at lower grades close to the water table and the creek. Other large trees will be saved by creating mounds where they occur in the lowered floodplain. Vegetation that cannot be replanted will be chipped or burned on-site. Any large logs (greater than 12 inches in diameter) will be scattered in the new floodplain to provide roughness and habitat. Some logs may be used as large woody debris for instream structures.

Man-Made Storm Drainage Improvements

Development of the South Reach project will include improvements to the existing man-made drainage facilities in the reach. There are four on-site drainage ditches, all of which will be converted to bioswales and tied in to overflow channels before entering the creek. A 72-inch culvert along the south side of Oberlin Road drains the residential area farther east. It currently empties directly into Yreka Creek. This culvert will be shortened to discharge into a bioswale in the new floodplain to be constructed along the east side of Yreka Creek near Oberlin Road.

2.4 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

PROJECT RELATIONSHIP TO EXISTING PLANNING DOCUMENTS

General Plan

California state law requires cities and counties to prepare a general plan describing the location and types of desired land uses and other physical attributes in the city or county. General plans are required to address land use, circulation, housing, conservation, open space, noise, and safety. The Yreka 2002–2022 General Plan is the City's basic planning document and provides a comprehensive, long-term plan for physical development in the city. The 2016 Greenway Master Plan Update and the three individual projects of the FHR Project include the provision for continuing and implementing a variety of General Plan land use designations from commercial to residential to public facilities. The proposed project will be consistent with the City's General Plan.

Zoning Ordinance

The Zoning Ordinance implements the policies of the General Plan by classifying and regulating the land uses and associated development standards in the city. Development of the 2016 Greenway Master Plan and Flood Hazard Reduction Project would be consistent with the City's Zoning Ordnance because it would not result in a change of zoning on any project site or adjacent properties.

PERMITS AND APPROVALS

This EIR will be used by the City of Yreka in considering approval of the proposed project. In accordance with CEQA Guidelines Section 15126, the EIR will be used as the primary environmental document in consideration of all subsequent planning and permitting actions associated with the project, to the extent such actions require CEQA compliance. The project may require approvals, permits, and entitlements from other public agencies for which this EIR may be used, including, without limitation, the following:

- California Department of Transportation (Caltrans), District 2
- California Department of Fish and Wildlife, Region 1
- California Department of Forestry and Fire Protection (Cal Fire)
- Regional Water Quality Control Board, Region 1 (North Coast)
- Siskiyou County Air Pollution Control District
- State Water Resources Control Board
- US Army Corps of Engineers
- US Fish and Wildlife Service
- US Forest Service – Klamath National Forest

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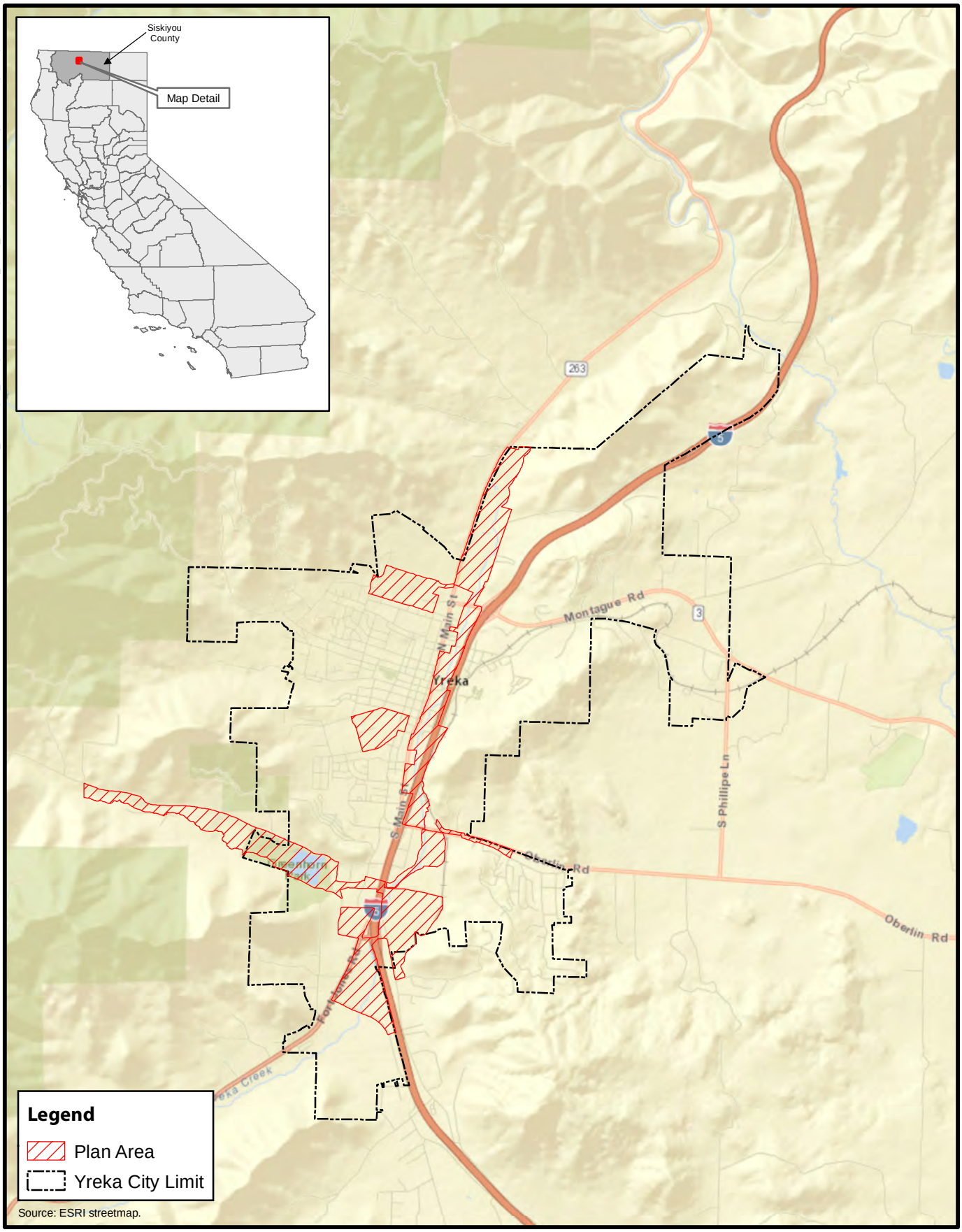
T:_GIS\Siskiyou_County\MXDs\Yreka\Yreka_Creek_Floodway\Figure 2.0-1 Regional Vicinity.mxd (8/25/2016)



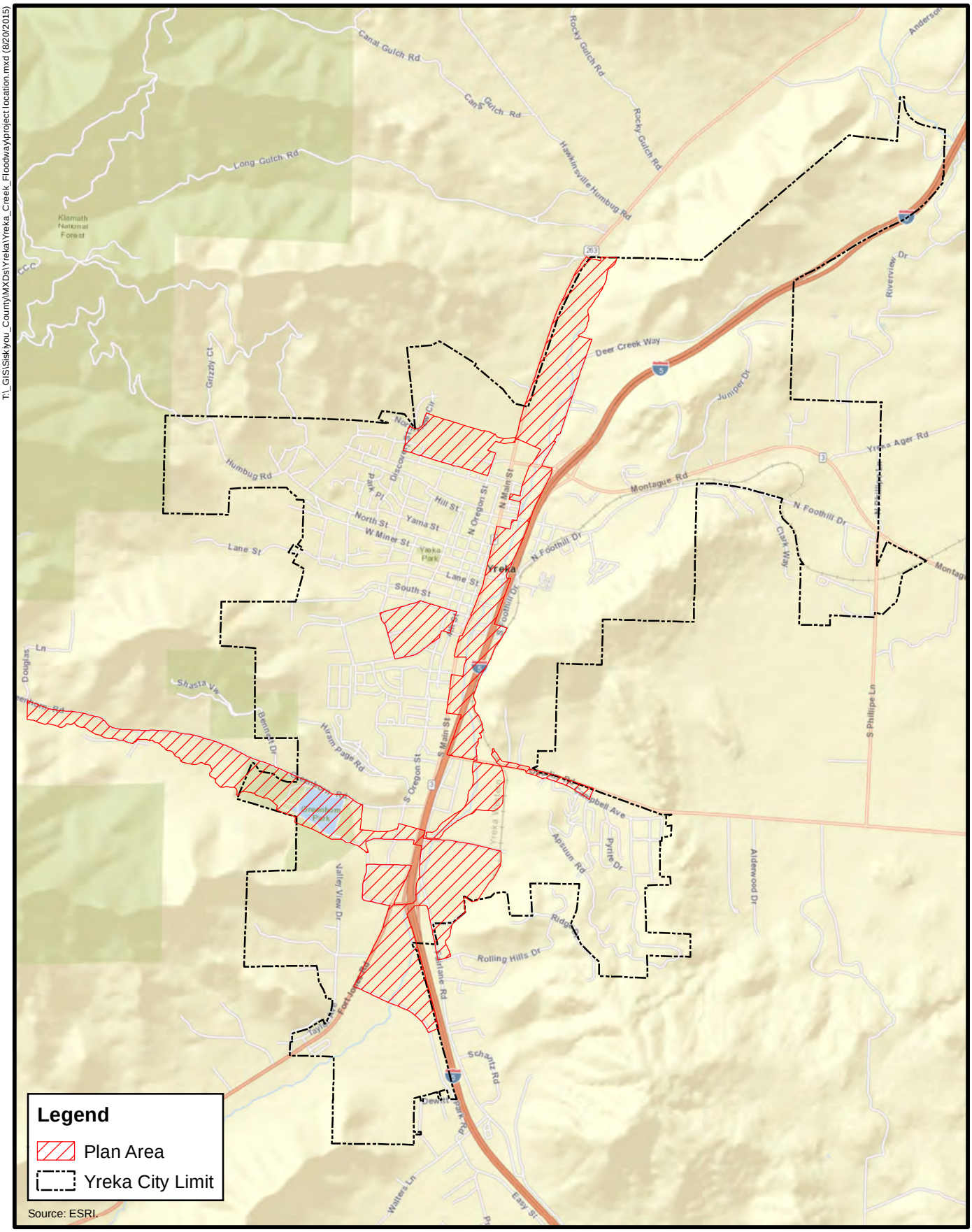
Source: ESRI streetmap.

0 0.5 1
MILES

FIGURE 2.0-1
Regional Vicinity

Michael Baker
INTERNATIONAL

T:_GIS\Siskiyou_County\MXDs\Yreka\Yreka_Creek_Floodway\project location.mxd (8/20/2015)



0 2,000 4,000
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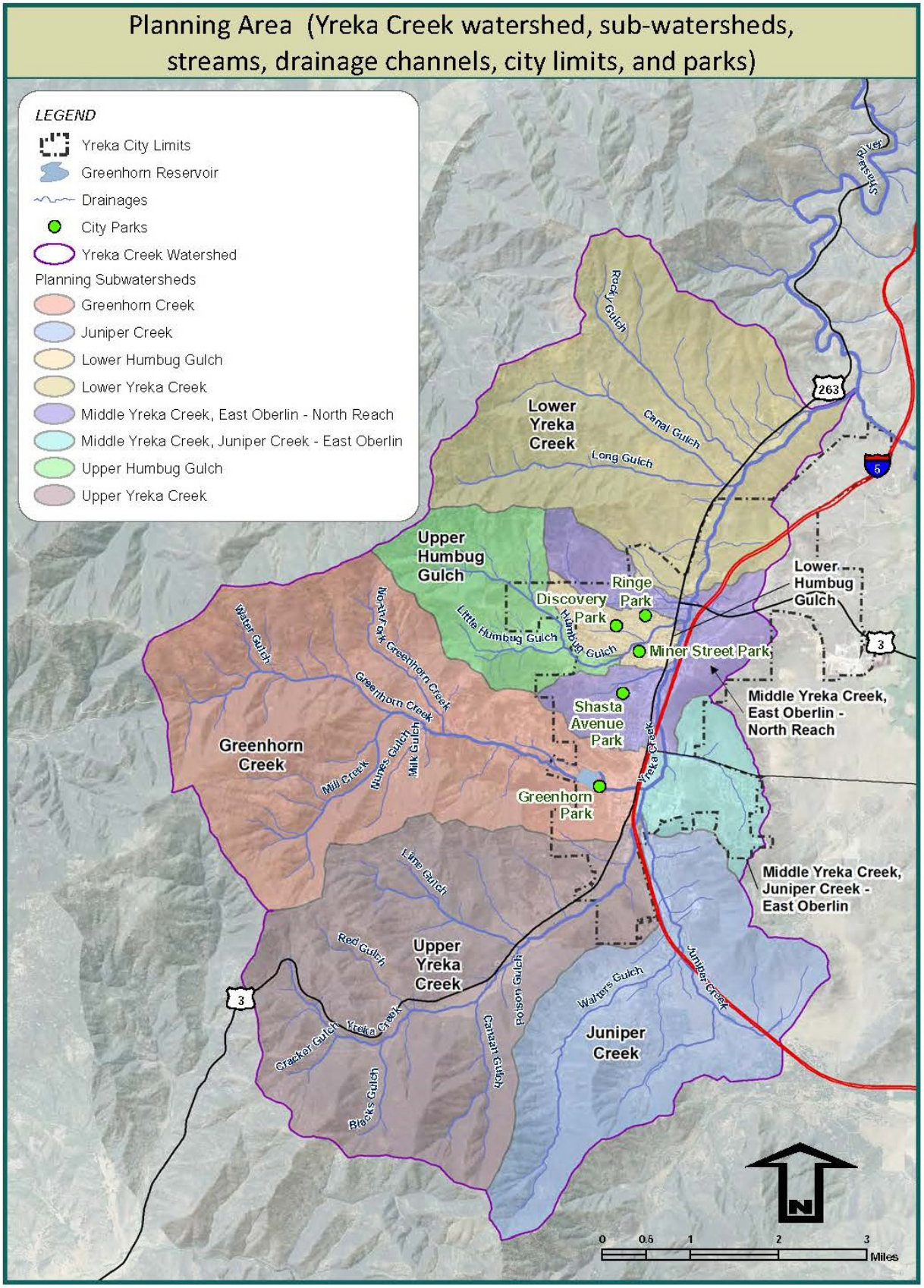
FIGURE 2.0-2
Project Location

Michael Baker
INTERNATIONAL

T:_CSWork\Yreka, City of\Floodwater Project\Figures



Source: Yreka Creek Greenway Master Plan

FIGURE 2.0-3

Yreka Creek Watershed

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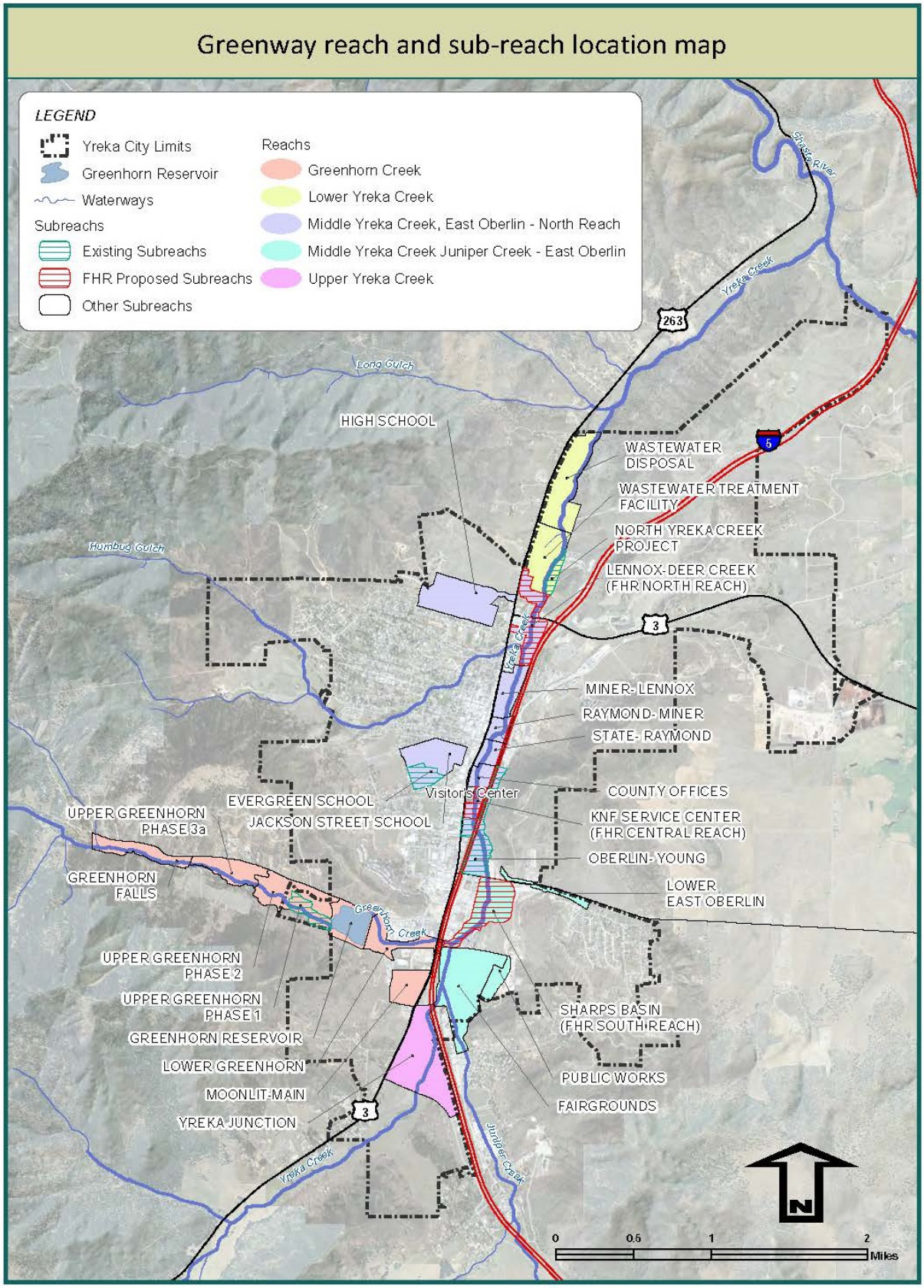

Source: Yreka Creek Greenway Master Plan

FIGURE 2.0-4

Yreka Creek Greenway Master Plan Area

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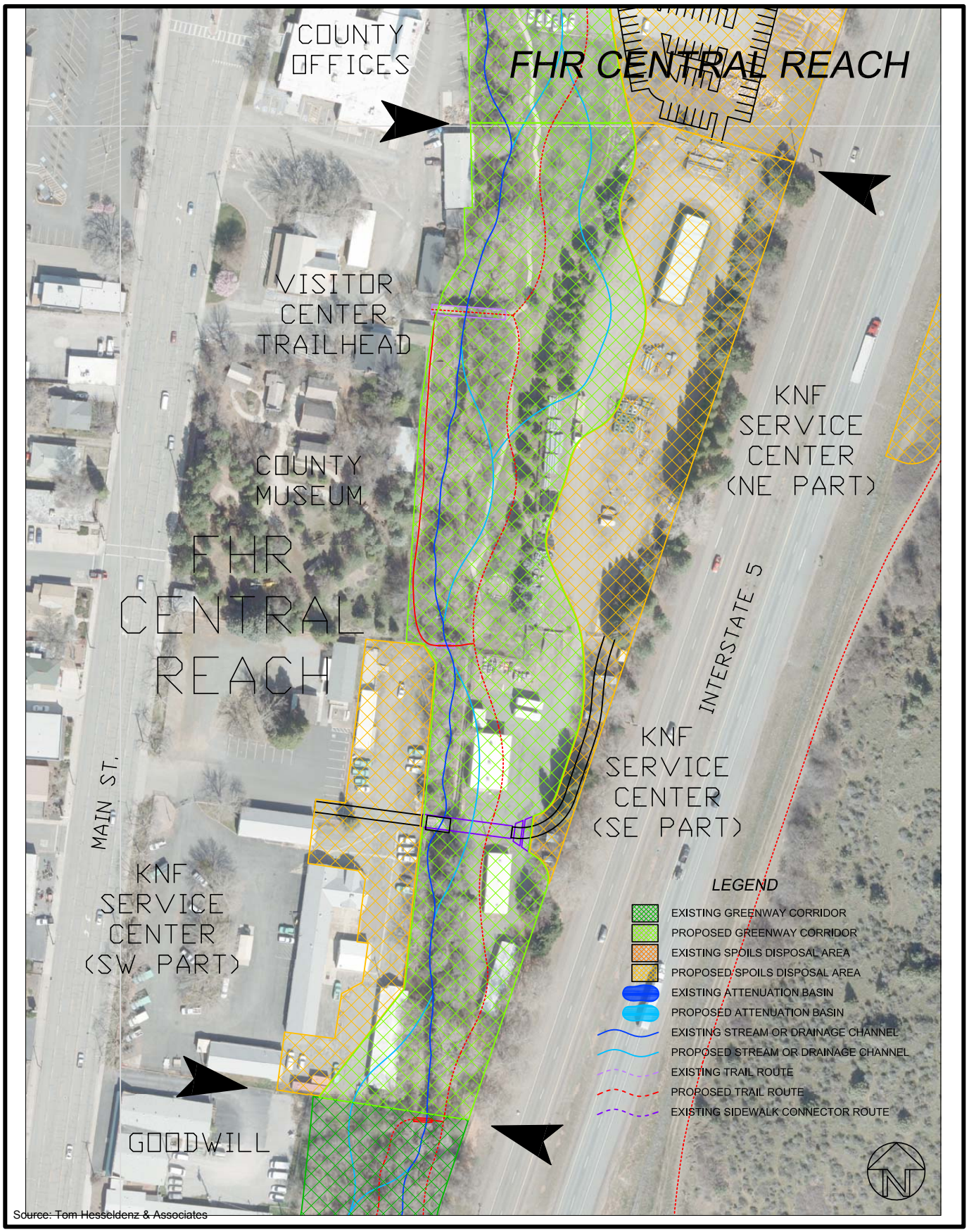

Source: Tom Hesseldenz & Associates

Not To Scale

FIGURE 2.0-5
FHR Project - Central Reach

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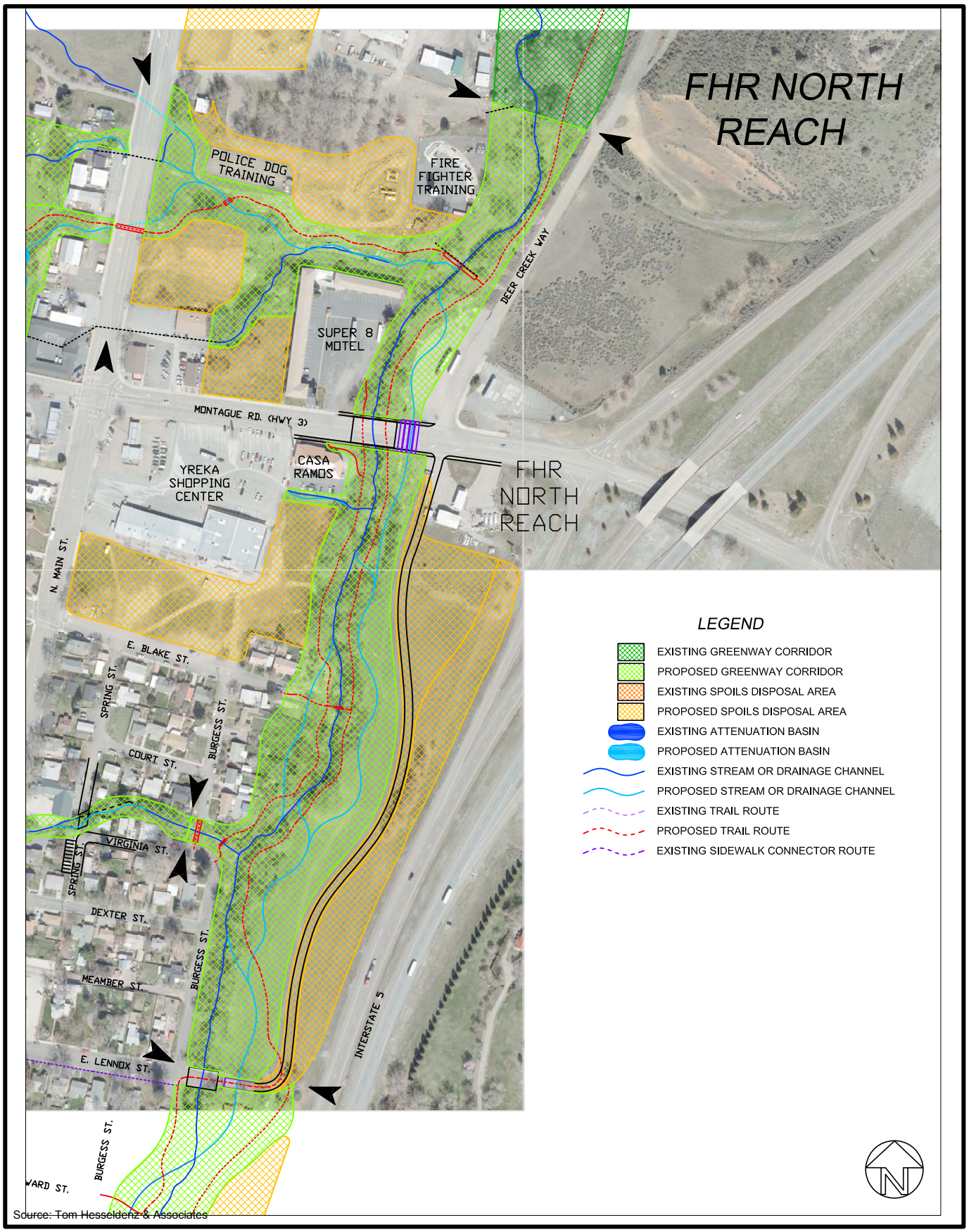

Source: Tom Hesseldenz & Associates

Not To Scale

FIGURE 2.0-6

FHR Project - North Reach

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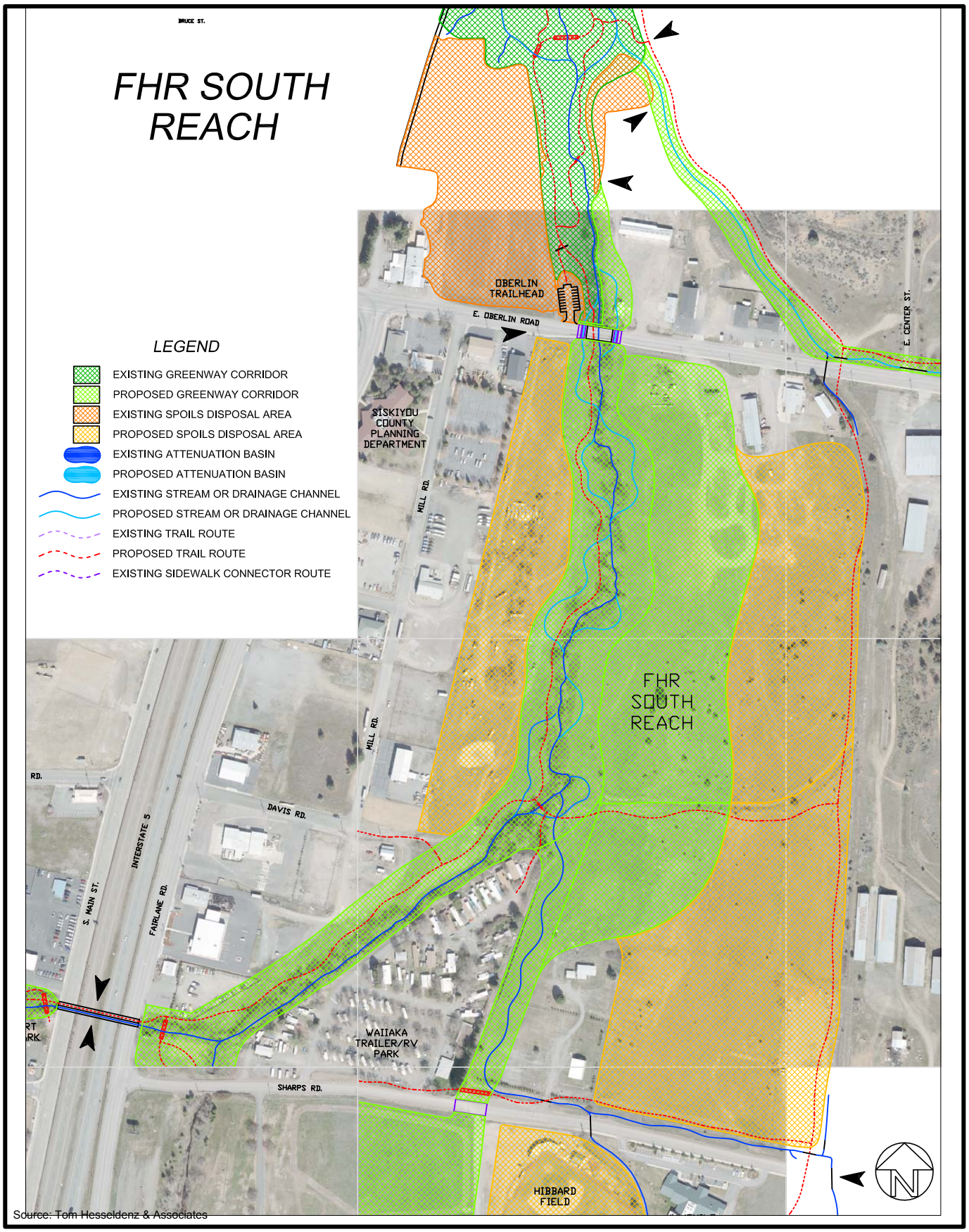

T:_CS\Work\Yreka, City of\Floodwater Project\Figures

Not To Scale

FIGURE 2.0-7

FHR Project - South Reach

Michael Baker INTERNATIONAL

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Yreka, City of. 2003. *City of Yreka General Plan 2002–2022*. http://cityofYreka.com/govt/dept/planning/forms.asp.

———. 2013. *Yreka Zoning Ordinance, Title 17 of the Yreka Municipal Code*. Codified through Ordinance No. 2013-08, passed November 18, 2013. https://library.municode.com/index.aspx?clientId=16542.

———. 2016. *Yreka Creek Greenway Master Plan*.

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3.0 – Introduction to the Environmental Analysis and Assumptions Used

ANALYSIS ASSUMPTIONS GENERALLY USED TO EVALUATE THE IMPACTS OF THE PROJECT

BASELINE ENVIRONMENTAL CONDITIONS ASSUMED IN THE DRAFT EIR

Section 15125(a) of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published. The CEQA Guidelines also specify that this description of the physical environmental conditions is to serve as the baseline physical conditions by which a lead agency determines whether impacts of a project are considered significant. For the proposed project, the physical environment as it existed at the time the NOP was published serves as the baseline.

The environmental setting conditions of the project area and the surrounding area are described in detail in the technical sections of this Draft EIR (see Sections 3.1 through 3.9). In general, these discussions describe the setting conditions as they existed when the NOP for the project was released on September 16, 2015.

APPROACH TO THE PROJECT ANALYSIS

Sections 3.1 through 3.9 of this Draft EIR contain a description of current setting conditions (including the applicable regulatory setting), an evaluation of the direct and indirect environmental effects resulting from implementation of the proposed project, identification of measures that mitigate the identified significant environmental effects, and, if applicable, identification of whether significant environmental effects of the proposed project would remain after application of the proposed mitigation measures. The individual technical sections of the Draft EIR adhere to the following format.

Environmental Setting

This subsection includes a description of the physical conditions associated with the technical area of discussion, consistent with CEQA Guidelines Section 15125. As identified above, the existing setting is based on conditions as they existed when the NOP for the project was released.

Regulatory Setting

This subsection describes applicable federal, state, regional, and local plans, policies, laws, and regulations that apply to the technical area of discussion.

Impacts and Mitigation Measures

The Impacts and Mitigation Measures subsection of each technical section identifies direct and indirect environmental effects associated with implementation of the proposed project and identifies proposed measures to mitigate environmental effects, where applicable. Environmental effects are determined by comparing the existing environmental setting with buildout of the proposed project. A statement is included in each impact discussion identifying the level of significance the impact will have before and after mitigation. Standards of significance are identified and used to determine whether identified environmental effects are considered significant and require the application of mitigation measures. Each environmental impact analysis is supported by substantial evidence included in the discussion.

Feasible mitigation measures that could minimize significant adverse impacts are discussed, after which the impact discussion notes whether the impact has been mitigated to a less than

significant level or remains significant and unavoidable. CEQA requires that mitigation to lessen the environmental impact be feasible. CEQA Guidelines Section 15126.4(a)(1) states, "An EIR shall describe feasible measures which could minimize significant adverse impacts…" Feasible is defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1).

Before mitigation measures are recommended, the EIR first evaluates whether existing federal, state, or local regulations or permits would reduce the identified impact to a less than significant level. If an existing regulatory process will reduce the environmental impact, the process will be discussed in the relevant EIR section and no mitigation will be required. Only if there is no existing process, or if there is a need to modify an existing process to address project impacts, will a project-specific mitigation measure be incorporated.

Timing for mitigation will generally follow one of the following time periods:

- Prior to Approval: Generally this refers to a feature or requirement that must appear on building or construction plans that would be reviewed and approved prior to taking action on any phase of the project.

- Prior to Construction or Earth Disturbance: Generally this refers to measures that must be taken or followed prior to physically altering the project area in conformance with the approved plans.

- During Construction or Earth Disturbance: Generally this refers to actions that must occur during the construction process.

- Operation of the Project: Generally measures with this timeline would extend beyond completion of construction.

In all of the above, City will use judgment to determine when a measure would be applied. For phased projects, it is possible that one or more mitigation measure may apply to different phases of the project yet occur simultaneously. In all instances, the timing of the mitigation measure will be indicated in the EIR and in the Mitigation Monitoring and Reporting Program (MMRP). Timing may be altered as needed to meet the intent of the measure and as documented in the MMRP.

APPROACH TO THE CUMULATIVE IMPACT ANALYSIS

Definition of Cumulative Setting

CEQA Guidelines Section 15130(a) requires that an EIR "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." CEQA Guidelines Section 15130(b) states, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

For this project, the cumulative setting conditions considered in this Draft EIR generally encompass the future projects of the Greenway Master Plan as shown in **Table 2.0-1** of this EIR. However, the cumulative setting varies for each environmental issue area, depending on the resources affected

and any relevant boundaries, such as the Northeast Plateau Air Basin for air quality resources or the areas in and directly adjacent to the project area for cultural resources. Each technical section of the Draft EIR includes a description of the geographic extent of the cumulative setting for that resource based on the characteristics of the environmental issues under consideration as set forth in CEQA Guidelines Section 15130(b).

Consideration of Cumulative Impacts

Each technical section in the Draft EIR considers whether the project's effect on anticipated cumulative setting conditions is cumulatively considerable (i.e., a significant effect). The determination of whether the project's impact on cumulative conditions is considerable is based on applicable public agency standards, consultation with public agencies, and/or expert opinion.

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3.1 AESTHETICS AND VISUAL RESOURCES

3.1 AESTHETICS

This section describes the existing visual character of Yreka and the project site, including existing sources of light and glare as well as existing views of the project site from surrounding vantage points. The impact analysis focuses on potential project impacts on the aesthetics and visual character of the project site and the overall change in the project area's character that would occur with implementation of the proposed project. The discussion in this section is based on site reconnaissance, photo documentation, and review of existing policy documents, including the 2002–2022 City of Yreka General Plan.

3.1.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

Yreka is located approximately 22 miles south of the California-Oregon border in an area considered to have high scenic value. The city is situated in a valley surrounded by mountains in the Klamath National Forest on the north and west, Shasta Valley to the east, and the Kilgore Hills to the southeast. Nearby mountains rise 300 to 4,000 feet above the city and provide an attractive backdrop. Some areas of the city have longer views to the Siskiyou and Cascade ranges to the north and east, with Mount Shasta as the prominent feature to the southeast. Mount Shasta is a dormant volcano 14,179 feet in elevation. The near mountain ranges are covered with pine forests and oak trees. Winter brings snow to the higher elevations, while spring brings green hills and the fresh foliage of deciduous trees. Fall color in the oaks brings a bright gold, which contrasts with the pines. These views are readily seen from most residential areas and are visible from major highways traversing the city (i.e., Interstate 5, State Route 3, and State Route 263).

Interstate 5 (I-5) runs along the eastern side of the city, with commercial, industrial, and some residential uses lining the highway. The majority if Yreka is west of I-5, with a limited amount of urban development to the east. Yreka serves as the regional commercial and service center to the smaller communities of Montague, Grenada, and Fort Jones, which are all located within 20 miles of the city. There are no locally designated or state scenic highways adjacent to or in the vicinity of the project site.

VISUAL CHARACTER OF THE PROJECT SITE

The Greenway Master Plan describes Yreka Creek and Lower Greenhorn Creek as having been altered by agriculture, mining, and urbanization over the years. Mining occurred in and near the creeks for approximately 100 years, which resulted in extensive dredger tailings in Yreka, Humbug, and Greenhorn creeks. Since the decline of mining, commercial and residential development has filled, straightened, and channelized the creeks' natural alignment. The development of the city, Highway 99 (later Main Street), and Interstate 5 have all encroached on Yreka Creek. The meandering alignment of a natural creek system is present only for a small segment south of the Yreka Junction Shopping Center, where it flows through pastures and farm fields. Some portions of the natural streamside environment, trees, shrubs, and riparian vegetation have been eliminated by the impacts of agriculture, mining, freeway construction, and urbanization.

Many sections of the creeks are armored with riprap comprising mainly broken concrete from infrastructure rehabilitation projects in an attempt to reduce the effects of erosion during periodic flooding. Very little of the channel armoring was constructed using native boulders. Many segments of the creek channel have steep, unprotected earth banks with no riprap and little vegetative cover. In other areas, the steep stream banks are covered with thick blackberry vines

and scattered deciduous trees. Remnants of old stone and concrete retaining walls are also present along the creek, evidencing past encroachment.

Central Reach retaining walls

Surrounding Land Uses

Because of the extensive area of the proposed Greenway Master Plan project, surrounding land uses include residential, commercial, industrial, public facilities, agriculture, and open space. Uses surrounding the three project areas include:

Central Reach:

East: existing Klamath National Forest (KNF) Service Center facilities (some to be removed/relocated), I-5, vacant land

North: Siskiyou County Museum, commercial uses, County Offices Reach

West: KNF Service Center commercial facilities

South: Goodwill Mission Services building, motel, I-5, vacant land, Oberlin-Young Reach

North Reach:

East: propane store, vacant land, I-5

North: police dog training area, firefighter training area, Sanitary Wastewater Treatment Facility, North Yreka Creek Reach

West: single-family homes, vacant land, grocery store, restaurant, motel

South: E. Lennox Street, single-family homes, Miner-Lennox Reach

South Reach:

East: vacant land, trailer/RV park, industrial uses

North: E. Oberlin Road, industrial uses, vacant land, Oberlin-Young Reach

South: Sharps Road, County Fairgrounds, Hibbard Baseball field, Fairgrounds Reach

West: industrial uses, vacant land, I-5

SCENIC VISTAS, PUBLIC VIEWS, AND SIGNIFICANT VISUAL FEATURES

Other than general views of the mountains and open space surrounding Yreka, the Yreka General Plan does not any specific scenic resources in the community. While General Plan Program LU.6.E allows the City to purchase or require open space easements for ridgelines and other scenic vistas, the General Plan does not identify any specific areas considered to be scenic vistas that need to be protected and preserved in the city. The General Plan does not include any goals, objectives, or programs identifying vistas, views, or significant features considered to be scenic resources in need of protection.

LIGHT AND GLARE

The project site is currently undeveloped and does not have any sources of light or glare. Existing lighting in the project area is dominated by lit signage, exterior building lighting, and parking lot lighting at the commercial uses, as well as automobile and truck lights from Interstate 5 adjacent to Yreka Creek.

4.1.2 REGULATORY SETTING

LOCAL

City of Yreka 2002–2022 General Plan

The Yreka General Plan 2002–2022 includes programs requiring protection of scenic views and areas of scenic value. Program LU.6.C requires the consideration of views during project review and design, maintaining visual access whenever practical. Additionally, Program LU.6.E allows the City to purchase or require open space easements for ridgelines and other scenic vistas as part of a development request. Finally, General Plan Program CO.7.B requires the City to consider the possibility of acquiring view-sensitive lands or open space easements for public open space or recreational use.

City of Yreka Municipal Code

Yreka Municipal Code, Title 16, Zoning establishes site development standards including view obstruction requirements for residential projects in the city. Section 16.46.060 addresses light and glare in the city, requiring that all outdoor lighting be designed to prevent unreasonable glare to adjoining properties and controlled by such reasonable means as are practical to prevent sky-reflected glare.

3.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

California Environmental Quality Act (CEQA) Guidelines Appendix G states that a project may have a significant effect on the environment if the project would result in any of the following:

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

2) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a scenic highway.

3) Substantially degrade the visual character or quality of the site and its surroundings.

4) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

METHODOLOGY

The discussion in this section is based on site reconnaissance, photo documentation, and review of existing policy documents, including the Yreka General Plan, as well as review of the Greenway Master Plan future improvements and the proposed Flood Hazard Reduction (FHR) Project improvements and the City's Zoning Ordinance.

PROJECT IMPACTS AND MITIGATION MEASURES

Adversely Affect a Scenic Vista and Substantially Degrade the Visual Character of the Site (Standards of Significance 1 and 3)

Impact 3.1.1 Implementation of the proposed project would result in a reduction in potential flood hazards in the city and expand the existing open space and recreational opportunities along Yreka Creek and its tributaries. This will add to the city's scenic quality and visual character. This impact would be **less than significant.**

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. While General Plan Program LU.6.E would require open space easements for ridgelines and other scenic vistas, other than general views of the mountains and open space surrounding Yreka, the Yreka General Plan does not identify any specific areas considered to be scenic vistas that need to be protected and preserved. The General Plan does not include any goals, objectives, or programs identifying vistas, views, or significant features considered to be scenic resources in need of protection.

Greenway Master Plan

The 2016 Greenway Master Plan is an update of the existing Master Plan. The Master Plan was created in order to protect the Yreka Creek Greenway within the city. The plan has a number of benefits. Of importance in this EIR section is what is termed social benefit, which include trails and greenways within the Yreka Creek corridor that enhance recreational opportunities in the city. This area is considered open space by the City and would therefore be regarded as a scenic area according to the General Plan.

The Greenway Master Plan Implementation Strategy contains a number of goals, objectives, and action items that protect the scenic quality of the Yreka Creek Greenway, such as:

Goal 5: Protection of natural resources within the Greenway Master Plan Area.

Goal 7: Consider the aesthetics of design and materials to be used in the Greenway.

Objective 6: To promote the protection of natural resources in the Greenway Master Plan area.

Action Item 18: Establish policies for the protection of the Greenway as a natural corridor for the primary benefit of native species.

Action Item 21: Install instream structures such as rock vanes, large woody debris, beaver dam analogues, and individual boulders and logs along existing and re-routed stream segments where fish habitat will be enhanced.

Action Item 23: Stream channel and floodplain restoration shall be designed to facilitate the expansion of beaver habitat, where feasible.

Action Item 25: The use of wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales shall be implemented, if feasible. Plant species found in the existing wet meadows in the city and along existing streams shall be used in constructed wet meadows.

Action Item 26: Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, if feasible.

Action Item 27: Retention of existing native and non-native large trees in their existing location is encouraged during restoration projects to promote viable bird habitat. In order to promote a healthy tree in excavation areas, the tree shall be retained in-place and left on a raised gently-sloping mound that corresponds to the root crown of the tree.

Action Item 28: Native riparian vegetation shall be used wherever feasible for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

Action Item 29: Native upland vegetation shall be used for all newly-constructed floodplain banks adjacent to new riparian areas. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

Action Item 30: Bioswales and ephemeral drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, sterile appearance and function of the gravel/cobble, and impeded water infiltration.

Action Item 31: The selection of various materials to be used for Greenway facilities shall adhere to a rustic theme such as of stone, rusting steel, and rough-sawn lumber.

The intent of the Master Plan is to return the creek and flood channel to a more natural state and remove the riprap and other unsightly debris used to reduce erosion along the creek. Adherence to these polices would return the creek to a more natural appearance and protect the existing scenic quality of the Greenway Master Plan area. Nothing in the proposed project would block views of the surrounding mountains or ridgelines; however, some of the natural vegetation may block views of the creek as it matures. Overall, adherence to the policies of the Master Plan would result in a **less than significant** impact on scenic vistas.

Flood Hazard Reduction Project

The three proposed reach projects of the FHR Project total approximately 111 acres with approximately 1.3 miles of creek area. The FHR Project also includes the widening of the floodplain in order to reduce the potential flood hazards along Yreka Creek. Widening of the floodplain involves the removal and replanting of existing vegetation and involves the relocation of 479,000 cubic yards of soil. During this process, the Central, North, and South reaches will be visually altered. However, this is a temporary process and is anticipated to be completed by 2018 for the Central Reach and by 2020 for the North and South reaches. For the most part, the reaches will be restored to their natural state. Upon project completion, the reaches will be greatly improved, providing additional public open space areas and recreational opportunities as well as improved flood protection in the city.

The majority of soils removed as part of the widening of the floodplain (called spoils), approximately 175,000 cubic yards, will need to be relocated to an off-site area. The spoils will be moved to private land within the existing 100-year flood zone in order to raise this land out of the flood zone. This relocation will not affect the scenic views of the area, as it will only raise the land by a few feet and not impact views of the Yreka Creek Greenway.

While the three reaches will be visually altered during construction, the ultimate character of the finished improvements will be more natural, looking less like a manufactured channel. The Master Plan will also offer more open space and recreational opportunity and add to the city's scenic views and visual character. Therefore, impacts to scenic views and visual character would be **less than significant**.

Mitigation Measures

None required.

Damage Scenic Resources, Including Trees, Rock Outcroppings, and Historic Buildings within a Scenic Highway (Standard of Significance 2)

Impact 3.1.2 The proposed project is not located adjacent to or near an identified scenic highway. The proposed project would have **no impact** on scenic resources on a scenic highway.

The California Department of Transportation (Caltrans) determines the eligibility of roadways within the state for designation as a state scenic highway. According to Caltrans, a highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view.

Caltrans' scenic highway mapping program identifies adopted and eligible scenic highways throughout the state. According to this program, there are no adopted scenic highways in Siskiyou County. State Route 3 (SR 3) and Interstate 5 (I-5) adjacent to the city are eligible state scenic highways but as of yet have not been officially designated.

Greenway Master Plan

While, SR 3 and I-5 are eligible scenic highways, neither have been officially adopted. Additionally, implementation of the Master Plan enhances the scenic quality of the Yreka Creek corridor and would not diminish the scenic quality of the area. Therefore, the proposed project would have **no impact** on a scenic highway.

Flood Hazard Reduction Project

While, SR 3 and I-5 are eligible scenic highways, neither have been officially adopted. Additionally, implementation of the FHR Project enhances the scenic quality of the Yreka Creek corridor and would not diminish the scenic quality of the area. Therefore, the proposed project would have **no impact** on a scenic highway.

Mitigation Measures

None required.

Light and Glare (Standard of Significance 4)

Impact 3.1.3 The proposed project would not introduce new sources of lighting and glare that could adversely affect existing and proposed development in the vicinity of the project site. This impact would be **less than significant.**

Greenway Master Plan

The existing setting for much of the area along Yreka Creek is already affected by commercial lighting and I-5. The Master Plan includes the potential for lighting to be installed for security in areas such as culverts or undercrossings used at roadways. Future improvements are anticipated to be confined to natural enhancements in order to maintain a natural setting. If it is deemed necessary to install lighting for safety or other reasons, these improvements will be required to adhere to the City's lighting standards. Municipal Code Section 16.46.060 addresses light and glare in the city, requiring that all outdoor lighting be designed to prevent unreasonable glare to adjoining properties and controlled by such reasonable means as are practical to prevent sky-reflected glare.

Additionally, Master Plan Action Item 31 requires the selection of materials to be used for Greenway facilities to adhere to a rustic theme comprising stone, rusting steel, and rough-sawn lumber. Compliance with this action item would remove the potential of glare from shiny or reflective surfaces. Therefore, the proposed Greenway Master Plan would have a **less than significant** impact for light and glare.

Flood Hazard Reduction Project

No new light or glare sources introduced during construction would be visible beyond the FHR Project's Central, North, and South reaches. All construction work will be performed during normal daylight construction hours, thereby eliminating any need for temporary light sources necessary for nighttime work.

The FHR Project would not result in any increase of artificial light and glare into the existing environment, as no new light sources are proposed as a part of the improvements to the Central, North, or South reaches. The only new potential source of light and glare may include external building lighting, security lighting, building windows, and reflective building materials for the KNF building to be relocated in the Central Reach.

The US General Services Administration (GSA) establishes construction standards for all federal buildings, including lighting standards. Section 6.15 of the 2003 Facilities Standards (P100) states that "exterior luminaries must comply with local zoning laws" (GSA 2003). As such, the new building would be subject to Yreka Municipal Code Chapter 13.10, General Standards, which requires that all outline lighting in the city comply with Article 600 of the current edition of the California Building Code.

In addition, if any new outside lighting were to be needed for the new KNF building, this lighting would be subject to the lighting requirements of Yreka Municipal Code Chapter 16.46, which requires that all outdoor lighting be designed to prevent unreasonable glare to adjoining properties and controlled by such reasonable means as are practical to prevent sky-reflected glare. Directional prismatic lenses and hooding devices will be utilized when possible. Compliance with 2003 Facilities Standards Section 6.15 and Municipal Code Chapter 13.10 would reduce potential impacts to a level that is considered **less than significant**.

Mitigation Measures

None required.

3.1.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for visual resources is rather unique because future improvements identified in the Greenway Master Plan do not involve residential, commercial, or industrial development typical of urban types of cumulative settings. The Master Plan involves improvements to not only reduce potential flooding impacts but also to return the creek and floodplain to a more natural setting and provide for additional recreational resources. No other projects in the city are anticipated that would include this type of development. As such, the cumulative setting is confined to the actual Greenway Master Plan area as defined in the Greenway Master Plan and shown in **Figure 2.0-4**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Degradation of Visual Character

Impact 3.1.4 The proposed project would result in a change in visual character in Yreka. However, this change would provide more open space and return the Greenway Master Plan area to a more natural setting, while reducing the potential for flooding in the city. As such, this impact would be **less than cumulatively considerable.**

Implementation of the Greenway Master Plan and the Flood Hazard Reduction project would return Yreka Creek and its associated floodplain to a more natural-looking condition. As a part of the improvements to reduce flooding, the following attributes will be created adjacent to or connected to the creek, all of which will enhance the city's visual character:

- New and/or expanded areas of open space
- Creation or expansion of new and existing trails
- Expansion of existing creekside recreation opportunities in a natural setting
- Promotion of wildlife and natural vegetation
- Added/expanded existing visual resources in the city

For those areas that will be raised out of the 100-year flood zone with the placement of project spoils, new development in these areas could occur consistent with the General Plan and zoning. However, the City does not consider these areas, while a part of the Greenway Master Plan and the Flood Hazard Reduction Project, part of the Yreka Creek scenic area, as they are on adjacent privately owned lands with existing development or have the potential for development consistent with existing plans. Therefore, potential future development in the newly raised spoils areas would not affect the creek's scenic quality.

All future improvements identified in the Greenway Master Plan would be required to adhere to the Master Plan's goals, objectives, and action items regarding project design and development standards. Adherence to these standards would further minimize the proposed project's contribution to degradation of visual character. Therefore, the project would not contribute to impacts to visual character and as such, would result in a **less than cumulatively considerable** impact.

Mitigation Measures

None required.

REFERENCES

Caltrans (California Department of Transportation). 2015. California Scenic Highway Mapping System. Accessed July 28. http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

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Yreka, City of. 2003. *Yreka General Plan* 2002–2022. Adopted December 18, 2003. http://ci.yreka.ca.us/sites/ci.yreka.ca.us/assets/files/General_Plan_Update_7-2012.pdf.

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3.2 AIR QUALITY

This section examines the existing regional and local air quality conditions, includes a summary of applicable air quality regulations, and analyzes potential air quality impacts associated with the construction and operations of the proposed project. Mitigation measures are provided as necessary to avoid or reduce significant adverse air quality impacts.

3.2.1 ENVIRONMENTAL SETTING

NORTHEAST PLATEAU AIR BASIN

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic drainage features. Yreka and the project area are located in a region identified as the Northeast Plateau Air Basin (NPAB), which principally includes Siskiyou, Modoc, and Lassen counties. The NPAB is divided into local air districts, which are charged with the responsibility of implementing air quality programs. The local air quality agency affecting Yreka is the Siskiyou County Air Pollution Control District (SCAPCD). Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. Within the SCAPCD, the primary sources of air pollution are wood-burning stoves, wildfires, farming operations, unpaved road dust, managed burning and disposal, and motor vehicles.

From an air quality perspective, the topography and meteorology of the NPAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface airflows to cause vertical air mixing and dispersing pollutant concentrations. Air quality in Yreka is better than virtually any other air basin in California. For instance, all federal and state air quality standards are met in the region.

AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as criteria air pollutants and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$), lead, and fugitive dust are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Presented in **Table 3.2-1** is a description of each of the primary and secondary criteria air pollutants and their known health effects.

TABLE 3.2-1
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (NOx) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.

Source: CAPCOA 2011

AMBIENT AIR QUALITY

Ambient air quality in the Yreka region can be inferred from ambient air quality measurements taken at nearby air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in Yreka are documented by measurements made by the SCAPCD.

The air pollutants ozone, PM_{10}, and $PM_{2.5}$ are the primary pollutants affecting California. The Foothill Drive air quality monitoring station in Yreka is the closest station to the project area. This station monitors ambient concentrations of ozone, PM_{10}, and $PM_{2.5}$. **Table 3.2-2** summarizes the published data since 2012 from the Yreka-Foothill Drive air quality monitoring station for each year that monitoring data is available.

TABLE 3.2-2
SUMMARY OF AMBIENT AIR QUALITY DATA

Pollutant Standards	2012	2013	2014
Ozone			
Max 1-hour concentration (ppm)	0.076	0.077	0.082
Max 8-hour concentration (ppm) (state/federal)	0.072 / 0.071	0.071 / 0.071	0.066 / 0.065
Number of days above state 1-hour standard	0	0	0
Number of days above state/federal 8-hour standard	1 / 0	1 / 0	0 / 0
Respirable Particulate Matter (PM_{10})			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	49.0 / 53.2	50.4 / 54.6	82.9 / 90.6
Number of days above state/federal standard	0 / 0	* / 0	* / 0
Fine Particulate Matter ($PM_{2.5}$)			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	29.9 / 29.9	43.5 / 43.5	71.9 / 71.9
Number of days above federal standard	0	12.3	12.3

Source: CARB 2015
Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
** = No data is currently available from CARB to determine the value.*

Areas with air quality that exceed adopted air quality standards are designated as nonattainment areas for the relevant air pollutants, while areas that comply with air quality standards are designated as attainment areas for the relevant air pollutants. As previously described, air quality in Yreka is better than virtually any other air basin in California, and all federal and state air quality standards are met in the region. As a result, Siskiyou County is classified as an attainment area for all criteria air pollutants.

TOXIC AIR CONTAMINANTS

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally rather than regionally.

To date, the California Air Resources Board (CARB) has designated nearly 200 compounds as TACs. Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds.

Most recently, CARB identified diesel particulate matter (diesel PM) as a TAC. Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. Diesel PM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. Diesel PM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of diesel PM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (EPA 2002, pp. 1-1 and 1-2). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. Diesel PM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others because of the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to the health effects of air pollution due to their immature immune systems and developing organs (OEHHA 2007). As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

3.2.2 REGULATORY SETTING

During implementation of the proposed project, there is the potential that criteria pollutants and dust would be emitted into the ambient air; therefore, development activities under the project fall under the ambient air quality standards promulgated at the local, state, and federal levels. The federal Clean Air Act of 1971 and the Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are promulgated by the US Environmental Protection Agency (EPA). The State of California has also adopted its own California ambient air quality standards (CAAQS), which are promulgated by CARB. Implementation of the project would occur in the NPAB, which is under the air quality regulatory jurisdiction of the SCAPCD and is subject to the rules and regulations adopted by the air district to achieve the national and state ambient air quality standards. Federal, state, regional, and local laws, regulations, plans, and guidelines are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act established NAAQS, with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based ambient air quality standards for six air pollutants. As shown in **Table 3.2-3**, these pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 3.2-3
AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	8 Hour	0.070 ppm (137μg/m^3)	0.075 ppm
	1 Hour	0.09 ppm (180 μg/m^3)	—
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 μg/m^3)	100 ppb
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	53 ppb (100 μg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 μg/m^3)	N/A
	3 Hour	—	N/A
	1 Hour	0.25 ppm (665 μg/m^3)	75 ppb
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 μg/m^3	N/A
	24 Hour	50 μg/m^3	150 μg/m^3
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3	15 μg/m^3
	24 Hour	N/A	35 μg/m^3
Sulfates	24 Hour	25 μg/m^3	N/A
Lead	Calendar Quarter	N/A	1.5 μg/m^3
	30 Day Average	1.5 μg/m^3)	N/A
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	N/A
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 μg/m^3)	N/A
Visibility-Reducing Particles	8 Hour (10:00 to 18:00 PST)	—	N/A

Source: CARB 2013
Notes: mg/m^3 = milligrams per cubic meter; ppm = parts per million; ppb = parts per billion; μg/m^3 = micrograms per cubic meter

Siskiyou County Air Pollution Control District

The SCAPCD is the local air quality agency with jurisdiction over the project site. The SCAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural and nonagricultural burning. Other district responsibilities include monitoring air quality, preparing air quality plans, and responding to citizen air quality complaints.

City of Yreka General Plan

The Yreka General Plan has programs to maintain safe air quality within the city and in the surrounding area. These programs include Program CO.5.A, which requires the minimizing of

adverse effects on the community of odor and emissions generated by industrial uses. The General Plan also includes Program CO.5.B, which requires the City to work with the air district in efforts to maintain air quality standards and to minimize air quality impacts associated with new development.

3.2.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The project would result in a significant impact to air quality if it would:

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

2) Expose sensitive receptors to substantial pollutant concentrations.

3) Create objectionable odors affecting a substantial number of people.

4) Conflict with or obstruct implementation of any applicable air quality plan.

5) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

METHODOLOGY

Air quality impacts were assessed in accordance with methodologies recommended by CARB. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

As described in Section 2.0, Project Description, the proposed project includes two components: (1) the 2016 Greenway Master Plan and (2) three specific projects as part of the Flood Hazard Reduction (FHR) Project. The overall Greenway Master Plan is analyzed as a program EIR using a broader spectrum based on requirements outlined CEQA Guidelines Section 15168. A project-level analysis is prepared for the three proposed projects of the FHR Project—Central Reach, North Reach, and South Reach—using a project-specific analysis based on the requirements of CEQA Guidelines Section 15161. As noted, construction of the proposed project would occur in distinct phases over several years. For instance, the Central Reach is scheduled to be completed by the end of 2018, and both the North and South reaches are scheduled for completion by the end of 2020. The future improvements to the reaches promulgated under the 2016 Greenway Master Plan, listed in **Table 2.0-2** of Section 2.0, Project Description, would all be completed by the year 2035.

For the purposes of this analysis, the Central Reach project is assumed to start and end in 2018. Implementation of the Central Reach project would entail the movement of approximately 89,000 cubic yards of dirt, removal of approximately 65,340 square feet of asphalt and a retaining wall, reconfiguration of 3,485 square feet of parking lot space, construction of new maintenance roads,

and movement of one structure. The North Reach and South Reach projects, which are larger, have been assumed to occur simultaneously from the beginning of 2019 through the end of 2020. The North Reach project would entail the movement of approximately 89,000 cubic yards of dirt, construction of new maintenance roads, and movement of two structures. The South Reach project entails the movement of 301,000 cubic yards of dirt.

Emissions resulting from implementation of the future projects promulgated under the 2016 Greenway Master Plan have also been estimated. However, it is noted that project-level variability and uncertainties exist related to future individual projects in terms of detailed plans, construction schedules, equipment requirements, etc., which are not currently determined. Emissions during the implementation of the future projects promulgated under the 2016 Greenway Master Plan are estimated based on 40 acres of disturbance, movement of 175 structures, and the movement of 422,026 cubic yards of dirt.[1]

IMPACTS AND MITIGATION MEASURES

Violate Air Quality Standard or Contribute Substantially to an Air Quality Violation (Standard of Significance 1)

Impact 3.2.1 The proposed project would not violate or substantially contribute to a violation of federal and state standards. This impact is considered **less than significant**.

None of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions. Therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. The project does not propose any new buildings and therefore no permanent source of stationary source emissions. In addition, as determined in Section 3.9, Effects Found Not to Be Significant, once completed the project would not result in a permanent increase in traffic. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor. Traffic conditions after the project is constructed are expected to be the same as or slightly better than existing traffic conditions. Therefore, new permanent stationary or mobile sources of emissions will not be quantified, as the project would not result in such emissions.

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities. The proposed project would result in the temporary generation of emissions resulting from excavation, material hauling, direct creek work, and worker trips. Fugitive dust, the dominant source of PM_{10} and $PM_{2.5}$ emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. Off-road construction equipment is often diesel-powered and can be a substantial source of NOx emissions, in addition to PM_{10} and $PM_{2.5}$ emissions. Worker commute trips and asphalt paving are dominant sources of ROG emissions.

Greenway Master Plan

Predicted maximum daily and annual construction-generated emissions associated with future projects under the 2016 Greenway Master Plan are summarized in **Table 3.2-4**. As previously stated, project-level variability and uncertainties exist related to future individual projects in terms of

[1] The movement of 422,026 cubic yards of dirt is derived from the proportion of acres disturbed to dirt movement identified for the three proposed projects of the Master Plan—Central Reach, North Reach, and South Reach—in **Table 2.0-1.**

detailed plans and construction schedules, which are not currently determined. For the purposes of this analysis, it is assumed that all future projects (see **Table 2.0-1**) would occur simultaneously.

TABLE 3.2-4
FUTURE GREENWAY MASTER PLAN PROJECTS CONSTRUCTION EMISSIONS

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Maximum Pounds in a Day					
Creek Work & Movement of Structures	3.02	42.07	11.72	5.58	57.90
Maximum Tons in a Year					
Creek Work & Movement of Structures	0.4	5.5	3.6	1.6	8.9
Total Tons of All Future Project Construction					
Creek Work & Movement of Structures	**1.2**	**16.3**	**14.1**	**6.1**	**26.3**

*Source: Source: CalEEMod 2013.2.2 (see **Appendix 3.2**)*

Notes: Emission projections account for the disturbance of 40 acres of land, movement of 422,026 cubic yards of dirt, and movement of 175 structures (22 homes and main buildings, 41 outbuildings, 75 small sheds, and 37 storage yards).

Flood Hazard Reduction Project

Predicted maximum daily construction-generated emissions associated with the three proposed reach projects of the FHR Project, totaling approximately 45 acres, are summarized in **Table 3.2-5**. Daily construction-generated emissions are disclosed in pounds generated daily. Total construction-generated emissions, in tons annually, are summarized in **Table 3.2-6**. For the purposes of this analysis, it is assumed that the Central Reach project would be constructed before the commencement of the North and South reaches. The North and South reaches are assumed to be constructed simultaneously.

TABLE 3.2-5
CENTRAL REACH, NORTH REACH, AND SOUTH REACH CONSTRUCTION EMISSIONS (MAXIMUM) POUNDS PER DAY

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Central Reach[1]					
Asphalt & Retaining Wall Removal	1.22	19.69	2.87	1.22	28.65
Creek Work & Movement of Structures	2.60	32.00	8.89	5.18	52.68
New Roads & Parking Lot Reconfigurations	2.32	29.96	19.25	10.95	39.88
Combined Total	***6.14***	***81.65***	***31.01***	***17.35***	***121.21***
North Reach[2]					
Creek Work & Movement of Structures	2.75	41.66	11.30	5.72	60.49
New Roads	0.74	4.81	1.05	0.64	8.17
Combined Total	***3.49***	***46.47***	***12.35***	***6.36***	***68.66***
South Reach[3]					
Creek Work & Movement of Structures	4.40	53.54	12.43	6.37	75.73
Combined Total	***4.40***	***53.54***	***12.43***	***6.37***	***75.73***
North Reach and South Reach Combined					
Combined Total	***7.89***	***100.01***	***24.78***	***12.73***	***144.39***

*Source: Source: CalEEMod 2013.2.2 (see **Appendix 3.2**)*

Notes:

1. *Emission projections account for the removal of 65,340 square feet of asphalt and a retaining wall totaling 1,610 tons of demolished material. Emission projections also account for the disturbance of 4.4 acres of land, movement of 89,000 cubic yards of dirt, movement of 7 structures, construction of 11,370 square feet of new roadways, and reconfiguration of 0.8 acres of parking lots.*
2. *Emission projections account for the disturbance of 13.4 acres of land, movement of 89,450 cubic yards of dirt, movement of 2 structures, and construction of 35,910 square feet of new roadways.*
3. *Emission projections account for the disturbance of 27.6 acres of land, movement of 301,000 cubic yards of dirt, and movement of 9 structures.*

As shown in **Table 3.2-5**, the Central Reach project is estimated to generate 6.14 pounds per day (lbs/day) of ROG, 81.65 lbs/day of NOx, 31.01 lbs/day of PM_{10}, 17.35 lbs/day of $PM_{2.5}$, and 121.21 lbs/day of CO. The North Reach and South Reach projects would generate a combined 7.89 lbs/day of ROG, 100.01 lbs/day of NOx, 24.78 lbs/day of PM_{10}, 12.73 lbs/day of $PM_{2.5}$, and 144.39 lbs/day of CO.

TABLE 3.2-6
CENTRAL REACH, NORTH REACH, AND SOUTH REACH CONSTRUCTION EMISSIONS
(TOTAL TONS)

Construction Phase	ROG	NOx	PM_{10}	$PM_{2.5}$	CO
Central Reach[1]					
Central Reach Totals	0.4	4.5	1.7	0.9	8.0
North Reach[2]					
North Reach Totals	0.4	4.8	2.9	1.3	7.9
South Reach[3]					
South Reach Totals	0.9	9.6	4.5	2.0	16.6
All Projects Combined (Total Tons)					
Central, North, and South Reach Combined Totals	**1.7**	**18.9**	**9.1**	**4.2**	**32.5**

*Source: Source: CalEEMod 2013.2.2 (see **Appendix 3.2**)*

Notes:

1. *Emission projections account for the removal of 65,340 square feet of asphalt and a retaining wall totaling 1,610 tons of demolished material. Emission projections also account for the disturbance of 4.4 acres of land, movement of 89,000 cubic yards of dirt, movement of 7 structures, construction of 11,370 square feet of new roadways, and reconfiguration of 0.8 acres of parking lots.*
2. *Emission projections account for the disturbance of 13.4 acres of land, movement of 89,450 cubic yards of dirt, movement of 2 structures, and construction of 35,910 square feet of new roadways.*
3. *Emission projections account for the disturbance of 27.6 acres of land, movement of 301,000 cubic yards of dirt, and movement of 9 structures.*

As shown in **Table 3.2-6**, the Central Reach, North Reach, and South Reach projects would generate a combined 1.7 tons of ROG, 18.9 tons of NOx, 9.1 tons of PM_{10}, 4.2 tons of $PM_{2.5}$, and 32.5 tons of CO throughout the entirety of construction.

Once construction activities are completed, air pollutant emissions cease. Mitigation measure **MM 3.2.1** identifies construction-related control measures (best management practices) that would reduce construction-related air pollutant emissions to less than significant levels.

Mitigation Measures

MM 3.2.1 The following dust control measures shall be incorporated into all Greenway Master Plan projects to reduce short-term emissions resulting from construction. Depending on weather and site conditions, measures shall include, but are not limited to, the following:

- Use regular watering to control dust generation as described below.
- When transporting soil and other dust-generating materials by truck during construction activities, cover materials and/or maintain 2 feet of freeboard.
- Wash or wet-sweep paved streets adjacent to construction sites as necessary to remove accumulated dust.
- During earth-moving operations, conduct watering as necessary to prevent visible emissions from extending beyond active areas.

- Water all unpaved roads used for any vehicular traffic at least once per every two hours of active operations and restrict vehicle speed on unpaved roads to 15 miles per hour (mph), or as appropriate to reduce dust.
- Pave, maintain a wet surface, or apply dust suppressants on all unpaved access roads, parking areas, and staging areas.
- Suspend land clearing, grading, earth-moving, or excavation activities when winds exceed 20 miles per hour.
- Cover inactive storage piles of topsoil or landscape materials.
- Post a publicly visible sign with the number and person to contact regarding dust complaints. This person shall have the authority and responsibility to respond and take corrective action within 24 hours.
- Construction staging areas should be located at a distance that would reduce odors and dust emissions from existing schools and residential areas.

Timing/Implementation: *Prior to and during construction*

Enforcement/Monitoring: *City of Yreka Public Works Department; Siskiyou County Air Pollution Control District*

As previously described, none of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions. Therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. Therefore, the project would only result in construction-generated emissions, which are short term and of temporary duration, lasting only as long as construction activities occur. Implementation of mitigation measure **MM 3.2.1** would reduce construction-related air pollutant emissions to less than significant levels. The proposed project would not violate an air quality standard or contribute substantially to an air quality violation. The impact is therefore **less than significant**.

Exposure of Sensitive Receptors to Toxic Air Contaminant Pollutant Concentrations (Standard of Significance 2)

Impact 3.2.2 Implementation of the proposed project would not result in increased exposure of existing sensitive land uses to pollutant concentrations that would exceed applicable standards. As a result, this impact is considered **less than significant**.

Sensitive land uses are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors are residences, schools, hospitals, and daycare centers.

Greenway Master Plan and Flood Hazard Reduction Project

None of the actions proposed as part of the proposed Greenway Master Plan or the three specific projects—Central Reach, North Reach, and South Reach—would result in a major source of toxic

air contaminant concentrations, which include industrial processes (e.g., petroleum refining and chrome-plating operations), commercial operations (e.g., gasoline stations and dry cleaners), and substantial amounts of motor vehicle exhaust (e.g., distribution centers and warehouses). None of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions; therefore, by their nature, they would not result in any operational processes that could potentially generate TACs.

Construction activities would involve the use of gasoline- or diesel-powered equipment that emits air contaminant exhaust fumes (i.e., diesel particulate matter (diesel PM)) and generates dust during soil disturbance. Diesel PM is the most prevalent TAC during construction activities. Construction activities associated with the proposed project would occur over an extended period; however, activities would be spread over a large area. The use of diesel-powered construction equipment in any one area would be short term and episodic and would cease when construction activities are completed in that area of the project site. Although construction activities can produce toxic air contaminants, the emission of these pollutants is temporary and lasts only as long as construction.

In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 30, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The use of diesel-powered construction equipment associated with development of the specific projects on the Central, North, and South reaches, as well as any of the future projects, would be temporary and episodic and would occur over several locations isolated from one another. Furthermore, construction activities would be subject to and would comply with Title 13, Section 2449(d)(3) of the California Code of Regulations (California State Heavy-Duty Vehicle Idling Emission Reduction Program), which limits idling of diesel-fueled off-road equipment to no more than 5 minutes, and would further reduce nearby sensitive receptors' exposure to temporary and variable diesel particulate matter emissions. For these reasons, the short-term generation of TACs associated with project construction would not contribute to a substantial concentration of air toxic emissions. Potential project impacts associated with toxic air contaminants would be **less than significant**.

Mitigation Measures

None required.

Create Objectionable Odors Affecting a Substantial Number of People (Standard of Significance 3)

Impact 3.2.3 The proposed project would not include sources that could create objectionable odors affecting a substantial number of people or expose new residents to existing sources of odor. Thus, this impact is considered to be **less than significant**.

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

Greenway Master Plan and Flood Hazard Reduction Project

The proposed project would not result in the installation of any equipment or processes that would be considered major odor emission sources. However, activities associated with construction activities would involve the use of a variety of gasoline- or diesel-powered equipment that would emit exhaust fumes. While exhaust fumes, particularly diesel exhaust, may be considered objectionable by some people, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly with increasing distance from the source. This impact is **less than significant**.

Mitigation Measures

None required.

Conflict with Any Air Quality Attainment Plans (Standard of Significance 4)

Impact 3.2.4 The proposed project would not conflict with air quality planning in Siskiyou County. There is a **no impact**.

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

Greenway Master Plan and Flood Hazard Reduction Project

As previously stated, the project area lies within the boundaries of the Siskiyou County portion of the Northeast Plateau Air Basin. Siskiyou County and Yreka are identified as being in attainment for all federal and state air quality standards. As such, Siskiyou County is not subject to an air quality plan. Therefore, there is **no impact**.

Mitigation Measure

None required.

3.2.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for air quality includes Yreka and the Northeast Plateau Air Basin. As previously described, air quality in Yreka is better than virtually any other air basin in California, and all federal and state air quality standards are met in the region. As a result, Siskiyou County is classified as an attainment area for all criteria air pollutants.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Result in a Cumulatively Considerable Net Increase in Nonattainment Criteria Pollutant (Standard of Significance 5)

Impact 3.2.5 The proposed project, in combination with growth throughout the air basin, would not contribute to a violation of air quality standards. This impact is **less than cumulatively considerable**.

A project is considered to result in a less than cumulatively considerable impact if it does not conflict with regional air quality planning efforts. Siskiyou County and Yreka are identified as being in attainment for all federal and state air quality standards. As such, Siskiyou County is not subject to an air quality plan.

Furthermore, none of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions. Therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. The project does not propose any new buildings and therefore no permanent source of stationary source emissions. In addition, as determined in Section 3.9, Effects Found Not to Be Significant, once completed the project would not result in a permanent increase in traffic. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor. Traffic conditions after the project is constructed are expected to be the same as or slightly better than existing traffic conditions. Therefore, the project would not result in long-term operational emissions.

Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur. Once construction activities are completed, air pollutant emissions cease. Mitigation measure **MM 3.2.1** identifies construction-related control measures (best management practices) that would reduce construction-related air pollutant emissions to less than significant levels.

For these reasons, the proposed project is considered to have a **less than cumulatively considerable** impact.

Mitigation Measures

None required.

REFERENCES

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CARB (California Air Resources Board). 2013. *Ambient Air Quality Standards*. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

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EPA (US Environmental Protection Agency). 2002. *Health Assessment Document for Diesel Engine Exhaust.* http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060.

North Coast Unified Air Quality Management District. 1982. *Rule 110 New Source Review and Prevention of Significant Determination.* Adopted 1982; amended 2015.

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3.3 BIOLOGICAL RESOURCES

This section describes the biological resources, including special-status species and sensitive habitats, which are known to occur or which have the potential to occur in the project study area (PSA), which includes the Yreka Creek corridor as well as the project components described in Section 2.0, Project Description. This section also includes a summary of the regulations and programs that provide protective measures to special-status species, an analysis of impacts to biological resources that could result from project implementation, and a discussion of mitigation measures necessary to reduce impacts to a less-than-significant level, where possible.

3.3.1 ENVIRONMENTAL SETTING

Several steps were taken to characterize the environmental setting in the project vicinity. A reconnaissance-level field survey was conducted on May 10, 2016, to collect site-specific data regarding habitat suitability for special-status species and to identify potential jurisdictional waters. Additional information was obtained from a variety of outside data sources and can be found in the reference list. Preliminary Database searches were performed on the following websites:

- US Fish and Wildlife Service's (USFWS) Sacramento Office Species Lists (2016a)
- USFWS's Information Planning and Conservation (IPaC) System (2016b)
- USFWS's Critical Habitat Portal (2016c)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (2016a)
- California Native Plant Society's (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (2016)
- University of California, Davis PISCES California Fish Data Website (2016)
- US Forest Service (USFS) Region 5 Regional Forester's 2014 Sensitive Plant Species List
- USFS Region 5 Regional Forester's 2013 Sensitive Animal Species List

The California Natural Diversity Database was queried for the Badger Mtn., Duzel Rock, Fort Jones, Gazelle, Hawkinsville, Indian Creek Baldy, McKinley Mtn., Montague, and Yreka US Geological Survey (USGS) 7.5-minute quadrangles to identify special-status species that may occur in the PSA.

REGIONAL SETTING

The PSA is located in the northwestern portion of Shasta Valley, which lies at the intersection of the Klamath Mountains and Southern Cascades ecological section of the Sierran Steppe-Mixed Forest-Coniferous Forest-Alpine Meadow ecological province (McNab et al. 2007). The main floor of the valley has an elevational range from 2,400 to 2,800 feet, and a general slope northward from the southern point of the valley.

According to the Western Regional Climate Center (WRCC 2016), the climate in the vicinity of the PSA is characterized as high desert. The climate is temperate and semi-arid to subhumid. The mean annual precipitation is approximately 19 inches and much of it is in the form of snow. The mean annual temperature is about 51 degrees Fahrenheit (°F). The average annual maximum temperature is 66.7° F and the average annual minimum temperature is 36.7°F. Temperature

reaches an average maximum in July of 91.3°F and an average minimum in January of 23.9°F. The frost-free period is usually from 125 to 150 days.

The Shasta River, which receives drainage from the northwestern slopes of Mount Shasta and from the mountains east and west of the valley, flows north and passes out of the area through a rocky gorge in the northwestern part of the valley, where it has a high gradient. It is a tributary of the Klamath River, which empties into the Pacific Ocean approximately 75 miles to the west. Yreka Creek comprises about thirteen percent of the Shasta River basin and is the first significant tributary to the Shasta River.

BIOLOGICAL SETTING

The ±90-acre PSA (10 acres in the Central Reach, 38 acres in the North Reach, and 43 acres in the South Reach) has a mix of developed land uses and natural community types. The developed areas include roads, buildings, parking lots, and light industrial development. Natural communities consist of riverine, montane riparian, urban, annual grassland, juniper, and pond. All of the natural communities have been affected by human development and the incursion of invasive species. Each cover type is described below based on *A Guide to Wildlife Habitats of California* (CDFW 2016b, Mayer and Laudenslayer 1988). Quantities of each habitat type within each reach are summarized in **Table 3.3-1**.

TABLE 3.3-1
HABITAT TYPES (WHR CLASSIFICATION)

WRR Habitat Type	North Reach	Central Reach	South Reach	Total
Riverine (miles)	0.42	0.20	0.58	1.20
Lacustrine (acres)	0.00	0.00	0.19	0.19
Annual Grassland (acres)	8.91	0.00	9.12	18.03
Montane Riparian (acres)	9.42	1.31	5.04	15.77
Juniper (acres)	0.00	0.00	15.04	15.04
Urban (acres)	19.63	8.66	13.68	41.97

Source: Mayer and Laudenslayer 1988

Within the PSA, the habitats are generally in a degraded condition. Although there is some functional riparian habitat, the incised and channelized stream limits the width and health of the riparian habitat. The other habitats in the PSA are dominated by weedy non-native vegetation and disturbed, compacted soils.

In the Central Reach of the PSA, Yreka Creek is confined to a concrete channel. The rest of the PSA in this reach consists of USFS buildings and associated gravel and asphalt lots. Although there is riparian habitat along the channelized stream, it is confined to a narrow strip. The vegetation in the Central Reach is dominated by red alder (*Alnus rhombifolia*) and Himalayan blackberry (*Rubus armeniacus*), with scattered trees of other species.

Habitats mapped in the PSA are provided in **Figure 3.3-1** (North Reach), **Figure 3.3-2** (Central Reach), and **Figure 3.3-3** (South Reach).

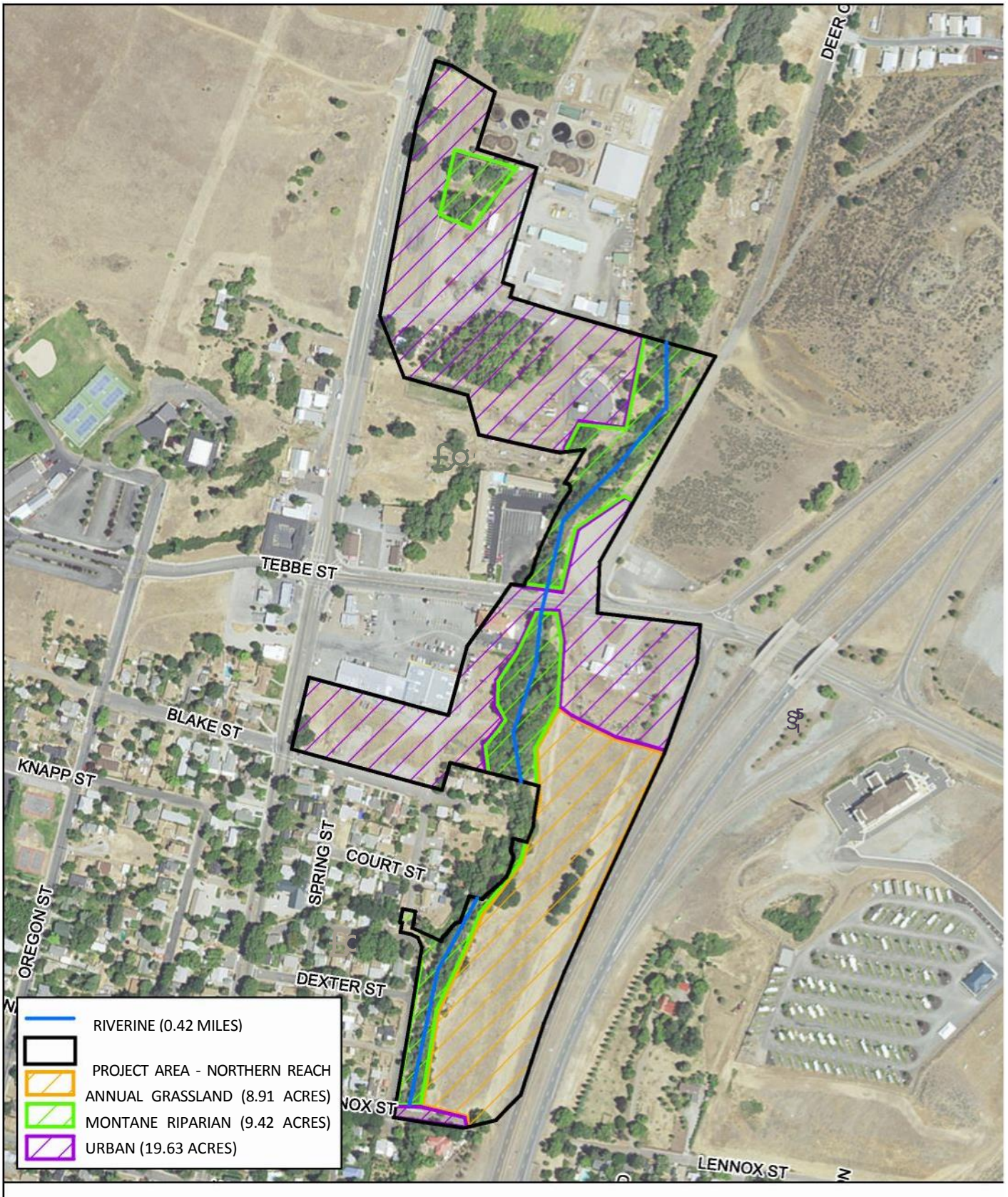

FIGURE 3.3-1 - NORTH REACH HABITAT MAP

2016 GREENWAY MASTER PLAN AND

FLOOD HAZARD REDUCTION PROJECT

0 225 450

Feet

Basemap Imagery Source: ESRI 7/7/2014

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FIGURE 3.3-2 - CENTRAL REACH HABITAT MAP

2016 GREENWAY MASTER PLAN AND
FLOOD HAZARD REDUCTION PROJECT

0 100 200

Feet

Basemap Imagery Source: ESRI, 7/7/2014

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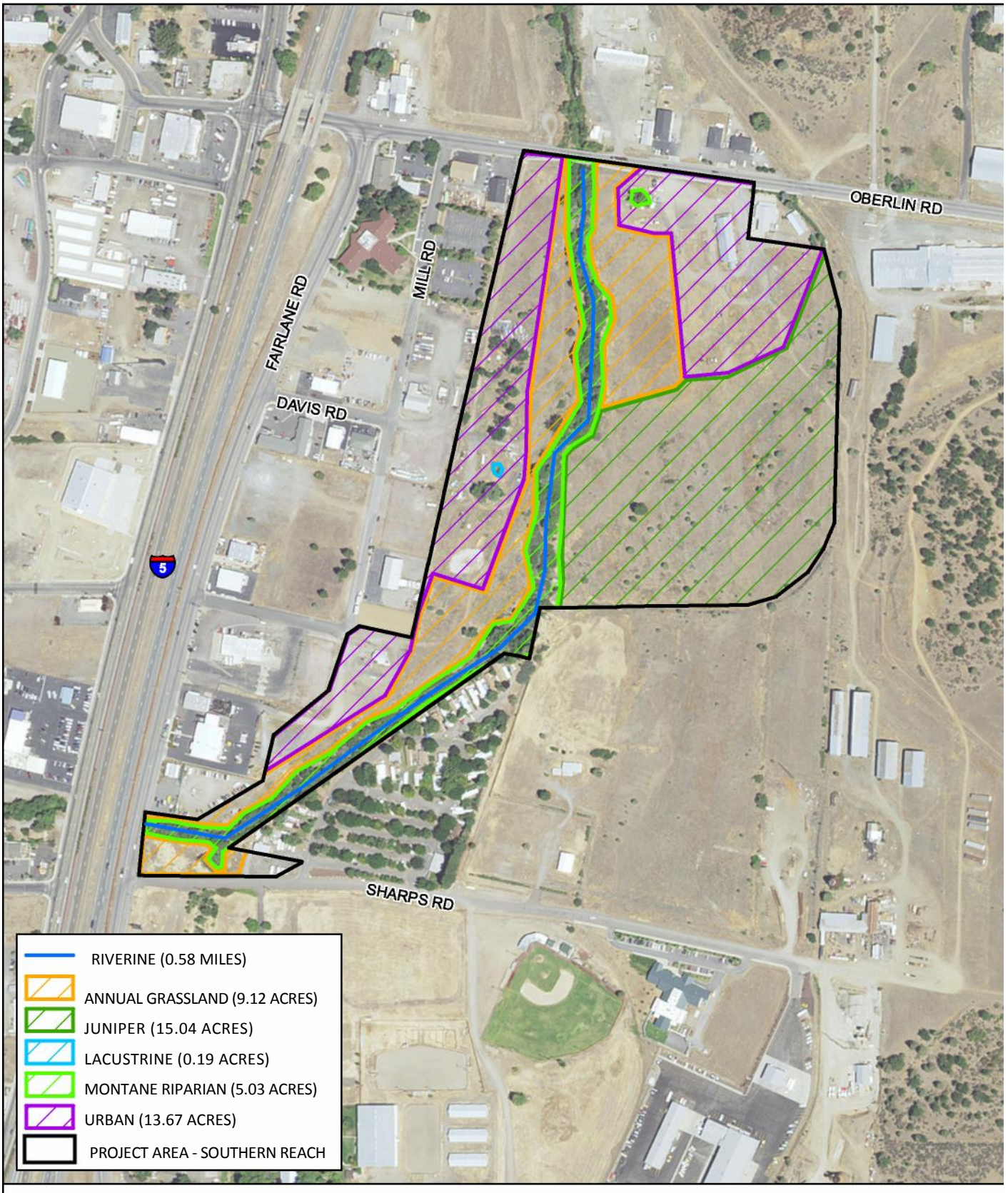

FIGURE 3.3-3 – SOUTH REACH HABITAT MAP

2016 GREENWAY MASTER PLAN AND
FLOOD HAZARD REDUCTION PROJECT

0 225 450

Feet

Basemap Imagery Source: ESRI, 7/7/2014

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Wildlife Habitats

Riverine

Yreka Creek flows through the City of Yreka for a distance of approximately four miles. There is approximately 1.20 linear miles of riparian habitat in the PSA, most of which is accounted for by Yreka Creek. There is also a small portion of Greenhorn Creek in the PSA at the southwest corner of the South Reach.

Riverine habitat is defined as unvegetated areas of open water and substrate. Intermittent or continually running water distinguishes rivers and streams from other aquatic habitats. The riverine habitat of Yreka Creek is associated with the stream's riparian habitat. The stream provides food for waterfowl, herons, and belted kingfishers. Many species of insectivorous birds as well as bats forage over water. Some of the mammals found in Yreka Creek include river otter, mink, muskrat and beaver. Western pond turtles are also known to occur in Yreka Creek.

Some of the anadromous steelhead and Chinook salmon entering the Shasta River system use Yreka Creek for spawning and juvenile rearing habitat. Similarly, the creek is designated critical habitat for the federally threatened coho salmon.

Montane Riparian

Montane riparian habitat occurs as an open to dense stand of broadleaved deciduous trees interspersed with shrubs along Yreka Creek in all three reaches of the PSA. Canopy species in the PSA include willow (*Salix* spp.), Oregon ash (*Fraxinus latifolia*), red alder, black cottonwood (*Populus trichocarpa*), and Fremont cottonwood (*P. fremontii*). Understory species include rose (*Rosa* spp.), American dogwood (*Cornus sericea*), western choke-cherry (*Prunus virginiana* var. *demissa*), poison hemlock (*Conium maculatum*), and Himalayan blackberry. A variety of herbaceous species were also identified including wild teasel (*Dipsacus fullonum*), field hedge parsley (*Torilis arvensis*), and blue wild rye (*Elymus glaucus*).

Riparian areas in the PSA provide nesting habitat for birds such as Downy Woodpeckers, House Wrens, California Scrub-Jays, Lesser Goldfinches, and Bullock's Orioles. They also provide important migratory habitat for birds such as Western Tanagers, Black-headed Grosbeaks, and various warbler species.

Amphibians such as frogs, newts, and salamanders use streams and adjacent vegetation for breeding and cover. Amphibians present in the area may include Pacific chorus frog, ensatina, and rough-skinned newt. Reptiles such as western fence lizard and garter snakes may also use riparian habitats in the PSA. Riparian habitats also provide dispersal and migration corridors for mammals and birds.

Annual Grassland

Annual grasslands in the PSA (North and South reaches only) are dominated by weedy annual grass and forb species, with scattered native perennial grasses and herbs. Representative grasses observed include needlegrass (*Achnatherum* sp.), cheat grass (*Bromus tectorum*), soft chess (*Bromus hordeaceus*), and intermediate wheatgrass (*Thinopyrum intermedium*). Herbaceous plants include annual buckwheat (*Eriogonum* sp.), curly dock (*Rumex crispus*), and wild mustard (*Brassica* spp.).

Annual grassland habitat type supports small mammals such as gophers and voles; reptiles such as gopher snakes and western fence lizards; and birds such as Savannah Sparrow and Western Kingbird.

Juniper

Juniper habitat in the PSA is characterized by very sparse western juniper trees (*Juniper occidentalis*) with an understory of annual grassland. Functionally, it is nearly equivalent to the previously described annual grassland habitat, with the addition of sparsely scattered low-lying shrubs such as rubber rabbitbrush (*Ericameria nauseosa*). Though juniper trees are sparse in the PSA, juniper berries are an important food source for wintering birds. Juniper foliage is also consumed by several browsing mammals such as mule deer and porcupines, and is an important food source for some of these animals during harsh winters.

Lacustrine

The South Reach section of the PSA contains a small topographic depression feature that ponds water. This feature is manmade and does not connect aboveground to Yreka Creek. At the time of the field surveys (May 2016), this feature had standing water. Many Pacific chorus frog tadpoles were observed in the pond. It is also likely used by waterfowl, wading birds, and possibly western pond turtles.

SENSITIVE HABITATS AND OTHER PROTECTED RESOURCES

Sensitive habitats are those that are of special concern to resource agencies or those that are protected under the California Environmental Quality Act (CEQA), Section 1600 of the California Fish and Game Code (FGC), and Sections 401 and 404 of the Clean Water Act (CWA).

Waters of the United States, Including Wetlands

Jurisdictional waters of the United States and isolated wetlands provide a variety of functions for plants and wildlife. Wetlands and other water features provide habitat, foraging, cover, migration, and movement corridors for both special-status and common species. In addition to habitat functions, these features provide physical conveyance of surface water flows capable of handling large stormwater events. Large storms can produce extreme flows that cause bank cutting and sedimentation of open waters and streams. Jurisdictional waters can slow these flows and lessen the effects of these large storm events, protecting habitat and other resources.

Waters of the U.S. in the PEA are likely limited to Yreka and Greenhorn creeks and would be characterized as Perennial Stream Channel. No adjacent wetlands were observed. It is possible that the pond in the South Reach could be deemed a jurisdictional water of the U.S., even without an above-surface connection to Yreka Creek.

Wildlife Movement Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to (a) sustain species with specific foraging requirements, (b) preserve a species' distribution potential, and (c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

The riparian corridors within the PSA facilitate wildlife movement between the PSA and adjacent lands.

SPECIAL-STATUS SPECIES

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their persistence in a given area or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as the CDFW, the USFWS, and the USFS, and private organizations such as the CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion.

For the purposes of this biological review, special-status species are defined as follows:

- Listed, proposed, or candidates for listing under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] 17.11 – listed; 61 Federal Register [FR] 7591, February 28, 1996, candidates)
- Listed or proposed for listing under the California Endangered Species Act (CESA) (FGC 1992 Section 2050 et seq.; 14 California Code of Regulations [CCR] Section 670.1 et seq.)
- Designated as Species of Special Concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)
- Meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including CNPS List Rank 1b and 2
- Species that are on the Region 5 Regional Forester's 2014 Sensitive Plant Species List
- Species that are on the Region 5 Regional Forester's 2013 Sensitive Animal Species List

The results of the USFWS, CDFW, USFS, and CNPS database queries identified several special-status species with the potential to be affected by project-related activities. **Figure 3.3-4** depicts the CNDDB results within 1 mile of the project, and **Table 3.3-2** provides a summary of all special-status plant species identified in the database results, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be affected by project components.

Special-Status Plants

Based on database search results, five special-status plant species have the potential to occur in the PSA. Each special-status plant species that is considered in the impact analysis is described below based on the data obtained from the CNPS Inventory of Rare, Threatened, and Endangered Plants of California (2016e).

Peck's Lomatium (*Lomatium peckianum*)

Peck's lomatium is a CNPS 2B.2 species (rare, threatened, or endangered in California; common elsewhere). According to the CNPS, Peck's lomatium may live in juniper woodland, which is found in limited extent in the South Reach section of the PSA.

Pendulous Bulrush (*Carex geyerii*)

Pendulous bulrush is a CNPS 2B.2 species (fairly endangered in California). According to the CNPS, pendulous bulrush lives in meadows and seeps. Although no wet areas were found in the grassland habitat within the PSA, there is potential habitat for the species in the pond located in the South Reach section of the PSA.

Greene's Mariposa Lily (*Calochortis greenii*)

Greene's mariposa lily is a CNPS 1B.2 species (fairly endangered in California). According to the CNPS, this species is known to occur in juniper woodland, a habitat that occurs in the South Reach of the PSA.

Alkali Hymenoxys (*Hymenoxys lemmonii*)

Alkali hymenoxys is a CNPS 2B.2 species (fairly endangered in California). According to the CNPS, this species is known to occur primarily in Great Basin scrub, which is not found in the PSA but which is found nearby.

Shasta Orthocarpus (*Orthocarpus pachystachus*)

Shasta orthocarpus is a CNPS 1B.1 species (rare, threatened, or endangered in California and elsewhere). According to the CNPS, this species may occur in Great Basin scrub as well as annual grassland, which are found in the PSA.

Special-Status Fish and Wildlife

Based on database search results, five special-status fish and wildlife species have the potential to occur in the PSA. Each species that is considered in the impact analysis is described below based on the data obtained from various published data sources. **Table 3.3-3** provides a summary of special-status animal species identified in the database results, a description of the habitat requirements for each species, and conclusions regarding the potential for each species to be affected by project components.

Coho salmon (*Oncorhynchus kisutch*), Chinook Salmon (*Oncorhynchus tshawytscha*) and Steelhead (*Oncorhynchus mykiss irideus*)

Three anadromous salmonid species enter the Shasta River system (including Yreka Creek) at various times of year to spawn. Federally threatened coho salmon are known to spawn in the lower three miles of Yreka Creek, utilizing areas with suitable amounts of gravel. The chinook salmon and steelhead populations in Yreka Creek are CDFW species of special concern. In the PSA, Yreka Creek provides potential (though degraded) spawning habitat for coho salmon and steelhead, and also provides rearing habitat for juvenile coho salmon, chinook salmon, and steelhead. Coho and steelhead are likely present in the PSA year-around at various life-history stages (spawning and rearing) (Normandeau Associates, Inc. 2013).

Yreka Creek is designated critical habitat for the Southern Oregon/Northern California Coast Coho Salmon Evolutionarily Significant Unit (ESU) (NMFS 1999). Yreka Creek's population of coho salmon is considered a key part of the Shasta Valley coho salmon recovery unit (CDFG 2002, and as part of the Coho Salmon Recovery Strategy, Yreka Creek is considered a key population to maintain or improve (CDFG 2004).

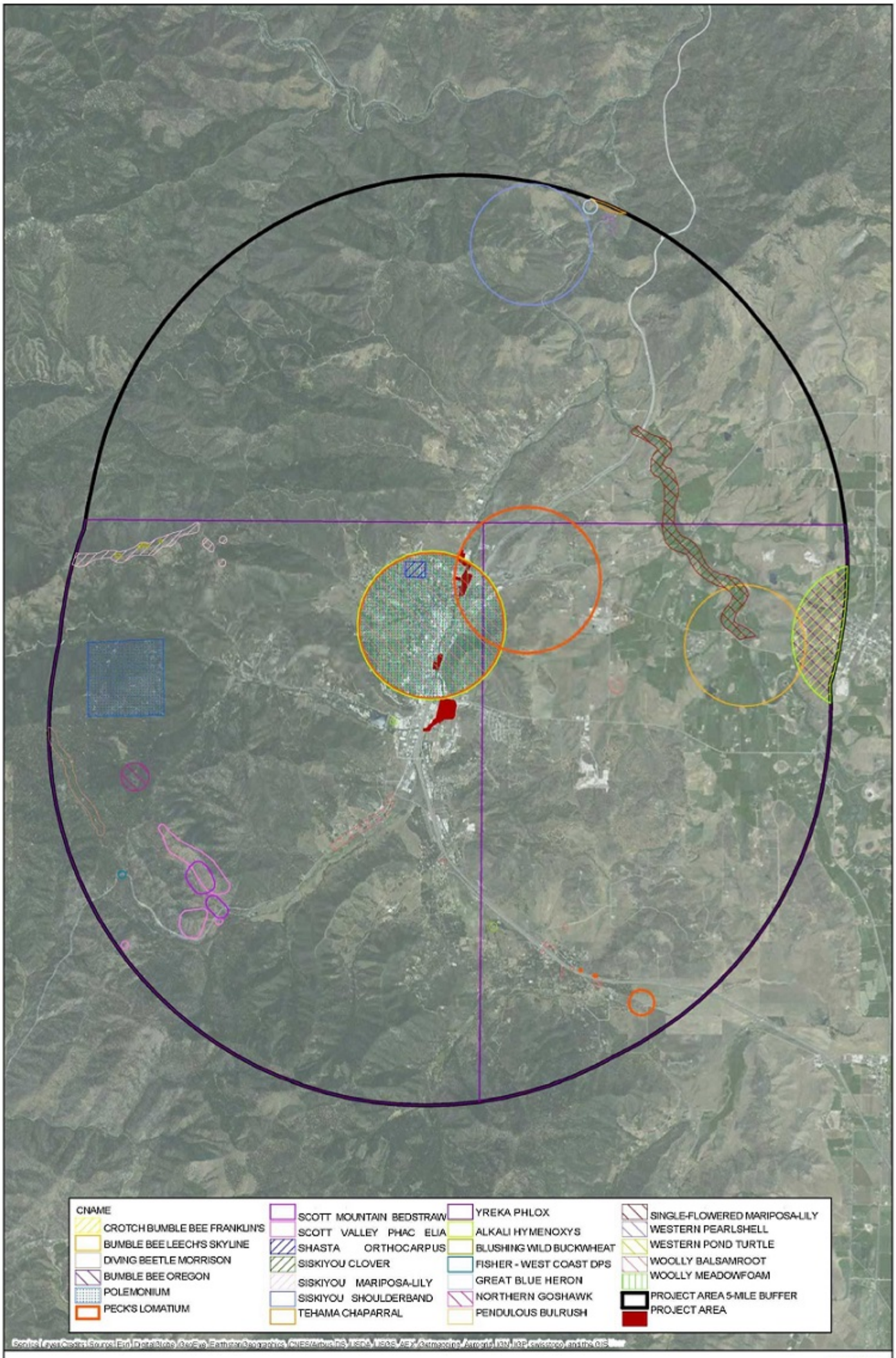

FIGURE 3.3-4 - CNDDB

YREKA CREEK FLOODPLAIN CONSTRUCTION PROJECTS

0 0.6 1.2 Miles

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TABLE 3.3-2
SPECIAL-STATUS PLANT SPECIES

Scientific Name	Common Name	Federal	State	CNPS	USFS	Habitat	Bloom Period	Potential Presence on Site?	Rationale
Balsamorhiza lanata	woolly balsamroot	None	None	1B.2		Rocky, volcanic soils. Cismontane woodland.	April-June	No	There is no suitable habitat in the PSA.
Calochortus greenei	Greene's mariposa-lily	None	None	1B.2	FSS	Meadows and seeps. Volcanic cismontane woodland, pinyon and juniper woodland, upper montane coniferous forest.	June-August	Yes	Marginally suitable habitat occurs within the PSA's meadows and juniper woodland.
Calochortus monanthus	single-flowered mariposa-lily	None	None	1A		Meadows and seeps.	June	No	This plant was last seen in 1876 and is presumed extinct.
Calochortus persistens	Siskiyou mariposa-lily	None	Rare	1B.2	FSS	Rocky, acidic soils. Lower montane coniferous forest. North Coast coniferous forest.	June-July	No	There is no suitable habitat in the PSA.
Chaenactis suffrutescens	Shasta chaenactis	None	None	1B.3	FSS	Sandy, serpentinite soils. Lower montane coniferous forest, upper montane coniferous forest.	May-September	No	There is no suitable habitat in the PSA.
Cypripedium fasciculatum	clustered lady's-slipper	None	None	4.2	FSS	Serpentinite seeps and streambanks. Upper montane coniferous forest, North Coast coniferous forest.	March-August	No	There is no suitable habitat in the PSA.

Scientific Name	Common Name	Federal	State	CNPS	USFS	Habitat	Bloom Period	Potential Presence on Site?	Rationale
Cypripedium montanum	mountain lady's-slipper	None	None	4.2	FSS	Broad-leafed upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest.	March-August	No	There is no suitable habitat in the PSA.
Eriogonum ursinum var. *erubescens*	blushing wild buckwheat	None	None	1B.3	FSS	Rocky, scree, talus. Montane chaparral, lower montane coniferous forest.	June-September	No	There is no suitable habitat in the PSA.
Galium serpenticum ssp. *scotticum*	Scott Mountain bedstraw	None	None	1B.2		Serpentinite soils. Lower montane coniferous forest.	May-August	No	There is no suitable habitat in the PSA.
Hymenoxys lemmonii	alkali hymenoxys	None	None	2B.2		Meadows and seeps (subalkaline). Great Basin scrub, lower montane coniferous forest.	June - September	No	There is no suitable habitat in the PSA.
Lomatium peckianum	Peck's lomatium	None	None	2B.2		Volcanic soils. Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland.	April-June	Yes	Marginally suitable juniper woodland occurs in the PSA's South Reach.
Minuartia howellii	Howell's sandwort	None	None	1B.3		Serpentine, xeric soils. Chaparral, lower montane coniferous forest	April-July	No	There is no suitable habitat in the PSA.
Orthocarpus pachystachyus	Shasta orthocarpus	None	None	1B.1		Meadows and seeps Great Basin scrub, valley and foothill grassland	May	Yes	Suitable habitat occurs in and near the PSA in the form of mesic grasslands, particularly downstream from Greenhorn Reservoir.

Scientific Name	Common Name	Federal	State	CNPS	USFS	Habitat	Bloom Period	Potential Presence on Site?	Rationale
Phacelia greenei	Scott Valley phacelia	None	None	1B.2	FSS	Serpentinite soils. Closed-cone coniferous forest, lower montane coniferous forest, upper montane coniferous forest, subalpine coniferous forest.	April - June	No	There is no suitable habitat in the PSA.
Phlox hirsuta	Yreka phlox	Endangered	Endangered	1B.2		Serpentinite soils, talus. Lower montane coniferous forest, upper montane coniferous forest.	April - June	No	There is no suitable habitat in the PSA.
Polemonium carneum	Oregon polemonium	None	None	2B.2		Coastal prairie, coastal scrub, lower montane coniferous forest.	April-September	No	There is no suitable habitat in the PSA.
Scirpus pendulus	pendulous bulrush	None	None	2B.2		Meadows and seeps (mesic), marshes and swamps (assorted freshwater).	June-August	Yes	Suitable habitat occurs in and near the PEA in and in the South Reach pond and in mesic areas below Greenhorn Reservoir.
Trifolium siskiyouense	Siskiyou clover	None	None	1B.1		Meadows and seeps (mesic), sometimes streambanks.	June-July	No	This species has not been documented since 1935 and is presumed extirpated.

Federal & State Status
(E) Endangered
(T) Threatened
(SSC) Species of special concern.
(C) Candidate for listing
(R) Rare

CNPS Rare Plant Rank
(1A) Presumed Extinct in California
(1B) Rare, Threatened, or Endangered in California and Elsewhere
(2) Rare, Threatened, or Endangered in California, But More Common Elsewhere

TABLE 3.3-3
SPECIAL-STAUS ANIMAL SPECIES

Scientific Name	Common Name	Federal	State	DFW	USFS	Potential presence on site?	Habitat	Rationale
Fish								
Oncorhynchus tshawytscha	Chinook salmon – Upper Klamath and Trinity Rivers ESU.			SSC	FSS	Yes	Habitat consists of rivers and streams. Chinook salmon spawn in areas with cool flows over loose gravel deposits.	Chinook salmon enter the Shasta River system (occasionally including Yreka Creek) to spawn. Yreka Creek also provides potential rearing habitat for juvenile Chinook salmon.
Oncorhynchus kisutch	Coho salmon – Southern Oregon/Northern California ESU	Threatened	Threatened			Yes	Habitat consists of rivers and streams. Coho salmon spawn in areas with cool flows over loose gravel deposits.	Coho salmon enter the Shasta River system (including Yreka Creek) to spawn. Yreka Creek also provides rearing habitat for juvenile coho salmon.
Oncorhynchus mykiss irideus	Steelhead – Klamath Mountains Province DPS			SSC		Yes	Habitat consists of rivers and streams. Steelhead spawn in areas with cool flows over loose gravel deposits.	Steelhead enter the Shasta River system (including Yreka Creek) to spawn. Yreka Creek also provides rearing habitat for juvenile steelhead.
Amphibians								
Rana boylii	Foothill yellow-legged frog	None	None	SSC	FSS	Yes	Streams and rivers.	Suitable habitat occurs in Yreka and Greenhorn creeks.
Reptiles								
Emys marmorata	western pond turtle	None	None	SSC	FSS	Yes	Lakes, rivers, and streams.	Suitable habitat occurs in Yreka and Greenhorn creeks.
Birds								
Accipiter cooperii	Cooper's hawk	None	None	WL		Yes	Nests in forests and riparian areas.	Suitable breeding and foraging habitat occurs in the PSA's riparian community.

Scientific Name	Common Name	Federal	State	DFW	USFS	Potential presence on site?	Habitat	Rationale
Accipiter gentilis	northern goshawk	None	None	SSC	FSS	No	Extensive areas of dense coniferous forest.	There is no suitable breeding habitat for goshawk in the PSA.
Agelaius tricolor	tricolored blackbird	None	None	SSC		No	Large grassy meadows and wetlands.	There is no suitable breeding habitat for tricolored blackbird in the PSA.
Aquila chrysaetos	golden eagle	None	None	FP, WL		No	Large tracts of open country.	There is no suitable breeding habitat for golden eagle in the PSA.
Athene cunicularia	burrowing owl	None	None	SSC		No	Open areas and disturbed sites.	This species is rare in the Yreka area. It would at most visit the region, and would not breed in the PSA.
Buteo regalis	ferruginous hawk	None	None	WL		No	Large tracts of open country.	There is no suitable breeding habitat for ferruginous hawk in the PSA.
Buteo swainsoni	Swainson's hawk	None	Threatened			No	Nests in riparian areas adjacent to farmland and open country.	This species is rare in the Yreka area. The habitats on the site are too disturbed, and there isn't enough open area for foraging.
Empidonax traillii	Willow flycatcher	None	Endangered		FSS	No	Nests in dense willow thickets adjacent to mountain meadows.	There is no suitable breeding habitat for willow flycatcher in the PSA.
Falco columbarius	merlin	None	None	WL		No	Nests in a variety of open and semi-open habitats.	This species does not breed in California.
Falco mexicanus	prairie falcon	None	None	WL		No	Large tracts of open country.	There is no suitable breeding habitat for prairie falcon in the PSA.
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP		No	Nests on cliffs.	There is no suitable breeding habitat for peregrine falcon in the PSA.

Scientific Name	Common Name	Federal	State	DFW	USFS	Potential presence on site?	Habitat	Rationale
Grus canadensis tabida	greater sandhill crane	None	Threatened	FP	FSS	No	Nests in large wet meadows.	There is no suitable breeding habitat for sandhill crane in the PSA.
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	FSS	No	Nests in large trees near lakes and rivers.	There is no suitable breeding habitat for bald eagle in the PSA.
Pandion haliaetus	osprey	None	None	WL		No	Nests in large trees and manmade structures near lakes and rivers.	There is no suitable breeding habitat for osprey in the PSA.
Riparia riparia	bank swallow	None	Threatened			No	Nests in sandy banks near water. Colonial nester.	The banks in the PSA are not tall enough to support bank swallow nesting.
Setophaga petichia	yellow warbler	None	None	SSC		Yes	Nests in riparian thickets.	Suitable breeding and foraging habitat occurs in the PEA's riparian habitat.
Strix occidentalis caurina	northern spotted owl	Threatened	Candidate Threatened	SSC		No	Lives in dense coniferous forests.	There is no suitable breeding habitat for northern spotted owl in the PSA.
Mammals								
Canis lupus	gray wolf	Endangered	Endangered			No	Mountains and forests.	There is no suitable habitat for gray wolf in the PSA.
Pekania pennanti	fisher - West Coast DPS	Proposed Threatened	Candidate Threatened	SSC	FSS	No	Dense montane forests.	There is no suitable habitat for fisher in the PSA.
Taxidea taxus	American badger	None	None	SSC		No	Large open areas away from human development.	This species could possibly use the PSA as a dispersal corridor.

Federal & State Status
(E) Endangered
(T) Threatened
(FSS) Forest Service Sensitive
(SSC) Species of special concern
(C) Candidate for listing
(R) Rare

Foothill Yellow-legged Frog (*Rana boylii*)

The foothill yellow-legged frog is a California species of special concern as well as a USFS Region 5 Survey and Manage species. This species is typically associated with streams and rivers in forests, chaparral, and woodlands. Suitable breeding habitat is considered to be low-gradient (up to 4 percent) perennial streams and rivers. These stream types generally have the potential for deep pools a sunny banks, which provide habitat for this frog. This frog occurs from near sea level to over 6000 feet in elevation. Although Yreka Creek is degraded in the PSA, it could provide marginal breeding habitat in the North and South Reaches as well as dispersal habitat through the Central Reach.

Western Pond Turtle (*Emmys marmorata*)

The western pond turtle is a California species of special concern as well as a USFS Region 5 Survey and Manage species. This species lives in marshes, streams, rivers, ponds, and lakes. They lay their eggs in burrows on dry land up to a half a mile from water. Although Yreka Creek is degraded in the PSA, it could provide marginal breeding habitat in the North and South Reaches as well as dispersal habitat through the Central Reach.

Yellow warbler (*Dendroica petechia brewsteri*)

The yellow warbler is a California species of special concern. Breeding distribution includes the Coast Range in Del Norte County, east to the Modoc plateau, south along the Coast Range to Santa Barbara and Ventura counties, along the western slope of the Sierra Nevada south to Siskiyou County, and along the eastern side of California from Lake Tahoe south through Inyo County. Breeding habitat includes riparian woodlands from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Other breeding habitats include montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial shrub cover.

Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk is a Department of Fish and Wildlife watch list species. This species breeds in large trees in forests, riparian areas, and suburbs. Some of the larger trees in the North Reach could support breeding Cooper's hawks.

6.2 REGULATORY FRAMEWORK

Federal, state, and local regulations have been enacted to require consideration and protection of ecological habitats and the species they support. A brief discussion of the specific regulations that apply to the biological resources likely to occur in the PSA is included below.

FEDERAL

Endangered Species Act

The Endangered Species Act of 1973 (ESA), as amended, provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code (USC) Sections 1531–1544). The ESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Title 50, Part 222, of the Code of Federal Regulations (50 CFR Section 222), further defined "harm" to include "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife

by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering."

ESA Section 7(a)(1) requires federal agencies to utilize their authority to further the conservation of listed species. ESA Section 7(a)(2) requires consultation with the US Fish and Wildlife Service or the National Marine Fisheries Service (NMFS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species, or designated critical habitat. For projects that may result in the incidental "take" of threatened or endangered species, or critical habitat, and that lack a federal nexus, a Section 10(a)(1)(b) incidental take permit can be obtained from the USFWS and/or the NMFS.

Clean Water Act

The basis of the Clean Water Act (CWA) was established in 1948; however, it was referred to as the Federal Water Pollution Control Act. The act was reorganized and expanded in 1972 (33 USC Section 1251), and at that time the Clean Water Act became the act's commonly used name. The basis of the CWA is the regulation of pollutant discharges into waters of the United States (WoUS), as well as the establishment of surface water quality standards.

Section 404

CWA Section 404 (33 USC Section 1344) established the program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Under this regulation, certain activities proposed within WoUS require the obtainment of a permit prior to initiation. These activities include, but are not limited to, placement of fill for the purposes of development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and bridges), and mining operations.

The primary objective of this program is to ensure that the discharge of dredged or fill material is not permitted if a practicable alternative to the proposed activities exists that results in less impact to WoUS, or the proposed activity would result in significant adverse impacts to WoUS. To comply with these objectives a permittee must document the measures taken to avoid and minimize impacts to WoUS and provide compensatory mitigation for any unavoidable impacts.

The US Environmental Protection Agency (EPA) and the USFWS are assigned roles and responsibilities in the administration of this program; however, the US Army Corps of Engineers (USACE) is the lead agency in the administration of day-to-day activities, including issuance of permits. The agencies will typically assert jurisdiction over the following waters (1) traditional navigable waters (TNW); (2) wetlands adjacent to TNWs; (3) relatively permanent waters (RPW) that are non-navigable tributaries to TNWs and have relatively permanent flow or seasonally continuous flow (typically three months); and (4) wetlands that directly abut RPWs. Case-by-case investigations are usually conducted by the agencies to ascertain their jurisdiction over waters that are non-navigable tributaries and do not contain relatively permanent or seasonal flow, wetlands adjacent to the aforementioned features, and wetlands adjacent to but not directly abutting RPWs (USACE 2007). Jurisdiction is not generally asserted over swales or erosional features (e.g., gullies or small washes characterized by low volume/short duration flow events) or ditches constructed wholly within and draining only uplands that do not have relatively permanent flows.

The extent of jurisdiction within WoUS which lack adjacent wetlands is determined by the Ordinary High Water Mark (OHWM). The OHWM is defined in 33 CFR Section 328.3(e) as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that

consider the characteristics of the surrounding areas." Wetlands are further defined under 33 CFR Section 328.3 and 40 CFR Section 230.3 as "those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" and typically include "swamps, marshes, bogs, and similar areas." The 1987 *Corps of Engineers Wetland Delineation Manual* (1987 Manual) sets forth a standardized methodology for delineating the extent of wetlands under federal jurisdiction (USACE 1987).

The 1987 Manual outlines three parameters that all wetlands, under normal circumstances, must contain positive indicators to be considered jurisdictional. These parameters include (1) wetland hydrology, (2) hydrophytic vegetation, and (3) hydric soils (USACE 1987). In 2006, the USACE issued a series of regional supplements to address regional differences that are important to the functioning and identification of wetlands. The supplements present "wetland indicators, delineation guidance, and other information" that is specific to the region. The USACE requires that wetland delineations submitted after June 5, 2007, be conducted in accordance with both the 1987 Manual and the applicable supplement.

Section 401

Under CWA Section 401 (33 USC Section 1341), federal agencies are not authorized to issue a permit and/or license for any activity that may result in discharges to waters of the United States, unless a state or tribe where the discharge originates either grants or waives CWA Section 401 certification. CWA Section 401 provides states or tribes with the ability to grant, grant with conditions, deny, or waive certification. Granting certification, with or without conditions, allows the federal permit/license to be issued and remain consistent with any conditions set forth in the CWA Section 401 Certification. Denial of the certification prohibits the issuance of the federal license or permit, and waiver allows the permit/license to be issued without state or tribal comment. Decisions made by states or tribes are based on the proposed project's compliance with EPA water quality standards as well as applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and any other appropriate requirements of state or tribal law. In California, the State Water Resources Control Board is the primary regulatory authority for CWA Section 401 requirements (additional details below).

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Section 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Section 21). The majority of birds found in the project vicinity would be protected under the MBTA.

Bald and Golden Eagle Protection Act

The bald eagle and golden eagle are federally protected under the Bald and Golden Eagle Protection Act (16 USC Sections 668–668c). Under the act, it is illegal to take, possess, sell, purchase, barter, offer to sell or purchase or barter, transport, export, or import at any time or in any manner a bald or golden eagle, alive or dead; or any part, nest or egg of these eagles unless authorized by the Secretary of the Interior. Violations are subject to fines and/or imprisonment for up to one year. Active nest sites are also protected from disturbance during the breeding season.

Executive Order 13112 – Invasive Species

This executive order directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and the USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

The Fish and Wildlife Coordination Act of 1958 (16 USC 661 et seq.)

The Fish and Wildlife Coordination Act requires that whenever any body of water is proposed or authorized to be impounded, diverted, or otherwise controlled or modified, the lead federal agency must consult with the USFWS, the state agency responsible for fish and wildlife management, and the National Marine Fisheries Service. Section 662(b) of the act requires the lead federal agency to consider the recommendations of the USFWS and other agencies. The recommendations may include proposed measures to mitigate or compensate for potential damages to wildlife and fisheries associated with modification of a waterway.

Executive Order 11990 Protection of Wetlands (42 FR 26961, 25 May 1977)

Executive Order 11990 requires federal agencies to provide leadership and take action to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural qualities of these lands. Federal agencies are required to avoid undertaking or providing support for new construction located in wetlands unless (1) no practicable alternative exists, and (2) all practical measures have been taken to minimize harm to wetlands.

USDA Forest Service "Sensitive Species" Policies and Requirements

Regional Foresters are required to identify sensitive species occurring within each Region by reviewing candidate species for federal listing, state designations of listed species and other special-status species, and other sources of information. Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing. There must be no impacts to sensitive species without an analysis of the significance of adverse effects on their populations, habitats, and on the viability of those species.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC Section 2070). The CDFW also maintains a list of "candidate species," which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of "species of special concern," which serve as species "watch lists."

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present and determine whether the proposed project will have a potentially significant impact on

such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened list would be considered significant. State-listed species are fully protected under the mandates of the CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

California Fish and Game Code

Streambed Alteration Agreement (FGC Sections 1600–1607)

State and local public agencies are subject to FGC Section 1602, which governs construction activities that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as waters of the state by the CDFW. Under FGC Section 1602, a discretionary Streambed Alteration Agreement must be issued by the CDFW to the project proponent prior to the initiation of construction activities within lands under CDFW jurisdiction. As a general rule, this requirement applies to any work undertaken within the 100-year floodplain of a stream or river containing fish or wildlife resources.

Native Plant Protection Act

The Native Plant Protection Act (FGC Sections 1900–1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by the CDFW). An exception in the act allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify the CDFW and give that state agency at least 10 days to retrieve the plants before they are plowed under or otherwise destroyed (FGC Section 1913). Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

Birds of Prey

Under FGC Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey such as hawks, eagles, falcons, and owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

"Fully Protected" Species

California statutes also afford "fully protected" status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit. FGC Section 3505 makes it unlawful to take "any aigrette or egret, osprey, bird of paradise, goura, numidi, or any part of such a bird." FGC Section 3511 protects from take the following fully protected birds: (a) American peregrine falcon (*Falco peregrinus anatum*); (b) brown pelican (*Pelecanus occidentalis*); (c) California black rail (*Laterallus jamaicensis coturniculus*); (d) California clapper rail (*Rallus longirostris obsoletus*); (e) California condor (*Gymnogyps californianus*); (f) California least tern (*Sterna albifrons browni*); (g) golden eagle (*Aquila chrysaetos*); (h) greater sandhill crane (*Grus canadensis tabida*); (i) light-footed clapper rail (*Rallus longirostris levipes*); (j) southern bald eagle (*Haliaeetus leucocephalus leucocephalus*); (k) trumpeter swan (*Cygnus buccinator*); (l) white-tailed kite (*Elanus leucurus*); and (m) Yuma clapper rail (*Rallus longirostris yumanensis*).

FGC Section 4700 identifies the following fully protected mammals that cannot be taken: (a) Morro Bay kangaroo rat (*Dipodomys heermanni morroensis*); (b) bighorn sheep (*Ovis canadensis*), except Nelson bighorn sheep (subspecies *Ovis canadensis nelsoni*); (c) Northern elephant seal (Mirounga angustirostri); (d) Guadalupe fur seal (*Arctocephalus townsendi*); (e) ring-tailed cat (genus *Bassariscus*); (f) Pacific right whale (*Eubalaena sieboldi*); (g) salt-marsh harvest mouse (*Reithrodontomys raviventris*); (h) southern sea otter (*Enhydra lutris nereis*); and (i) wolverine (*Gulo gulo*).

FGC Section 5050 protects from take the following fully protected reptiles and amphibians: (a) blunt-nosed leopard lizard (*Crotaphytus wislizenii silus*); (b) San Francisco garter snake (*Thamnophis sirtalis tetrataenia*); (c) Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*); (d) limestone salamander (*Hydromantes brunus*); and (e) black toad (*Bufo boreas exsul*).

FGC Section 5515 also identifies certain fully protected fish that cannot lawfully be taken even with an incidental take permit. The following species are protected in this fashion: (a) Colorado River squawfish (*Ptychocheilus lucius*); (b) thicktail chub (*Gila crassicauda*); (c) Mohave chub (*Gila mohavensis*); (d) Lost River sucker (*Catostomus luxatus*); (e) Modoc sucker (*Catostomus microps*); (f) shortnose sucker (*Chasmistes brevirostris*); (g) humpback sucker (*Xyrauchen texanus*); (h) Owens River pupfish (*Cyprinoden radiosus*); (i) unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*); and (j) rough sculpin (*Cottus asperrimus*).

Policies Related to California Wetlands and Other Waters

The California Resources Agency and its various departments do not authorize or approve projects that fill or otherwise harm or destroy coastal, estuarine, or inland wetlands. Exceptions may be granted if all of the following conditions are met:

- The project is water-dependent.
- No other feasible alternative is available.
- The public trust is not adversely affected.
- Adequate compensation is proposed as part of the project.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1966 (California Water Code Section 13000 et seq.; CCR Title 23, Chapter 3, Subchapter 15) is the primary state regulation that addresses water quality. The requirements of the act are implemented by the State Water Resources Control Board at the state level and at the local level by the Regional Water Quality Control Board (RWQCB). The RWQCB carries out planning, permitting, and enforcement activities related to water quality in California. The act provides for waste discharge requirements and a permitting system for discharges to land or water. Certification is required by the RWQCB for activities that can affect water quality.

Clean Water Act, Section 401 Water Quality Certification

CWA Section 401 (33 USC Section 1341) requires that any applicant for a federal license or permit that may result in a pollutant discharge to WoUS obtain a certification that the discharge will comply with EPA water quality standards. The state or tribal agency responsible for issuance of the

Section 401 certification may also require compliance with additional effluent limitations and water quality standards set forth in state/tribal laws. In California, the RWQCB is the primary regulatory authority for CWA Section 401 requirements.

The North Coast Regional Water Quality Control Board (RWQCB) is responsible for enforcing water quality criteria and protecting water resources in the project area. In addition, the RWQCB is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements or commonly by issuing conditional waivers to waste discharge requirements. The RWQCB requires that a project proponent obtain a CWA Section 401 water quality certification for CWA Section 404 permits issued by the USACE. A request for water quality certification (including waste discharge requirements) by the RWQCB and an application for a General Permit for Storm Water Discharges Associated with Construction Activities are prepared and submitted following completion of the CEQA environmental document and submittal of the wetland delineation to the USACE.

Delegated Permit Authority

California has been delegated permit authority for the National Pollutant Discharge Elimination System (NPDES) permit program including stormwater permits for all areas except tribal lands. Issuance of CWA Section 404 dredge and fill permits remains the responsibility of the USACE; however, the state actively uses its CWA Section 401 certification authority to ensure CWA Section 404 permits are in compliance with state water quality standards.

State Definition of Covered Waters

Under California state law, "waters of the state" means "any surface water or groundwater, including saline waters, within the boundaries of the state." Therefore, water quality laws apply to both surface water and groundwater. After the US Supreme Court decision in *Solid Waste Agency of Northern Cook County v. US Army Corps of Engineers*, the Office of Chief Counsel of the SWRCB released a legal memorandum confirming the state's jurisdiction over isolated wetlands. The memorandum stated that under the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other waters of the state are subject to state regulation, and this includes isolated wetlands. In general, the SWRCB regulates discharges to isolated waters in much the same way as it does for waters of the United States, using Porter-Cologne rather than Clean Water Act authority.

Nongovernmental Agency

California Native Plant Society

The CNPS is a nongovernmental agency that classifies native plant species according to current population distribution and threat level, in regard to extinction. The following description of the CNPS classification system is relevant to identifying potential impacts to biological resources due to project implementation.

The CNPS maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2013). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review.

- The following identifies the definitions of the CNPS listings:

- List 1A: Plants believed to be extinct
- List 1B: Plants that are rare, threatened, or endangered in California and elsewhere
- List 2: Plants that are rare, threatened, or endangered in California, but are more numerous elsewhere

All of the plant species on List 1 and List 2 meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code and are eligible for state listing. Plants appearing on List 1 or List 2 are considered to meet the criteria of CEQA Section 15380, and effects on these species are considered "significant" in this Draft Environmental Impact Report (DEIR). Classifications for plants listed under "List 3: Plants about which we need more information (a review list)" and/or "List 4: Plants of limited distribution (a watch list)," as defined by the CNPS, are not currently protected under state or federal law. Therefore, no detailed descriptions were provided or impact analysis performed for qualifying species under these classifications.

LOCAL

City of Yreka General Plan

The City of Yreka General Plan (General Plan) adopted in 2003 is the guiding document for development in the City of Yreka (City). The General Plan does not apply to trust land but does apply to land owned in fee by the Karuk Tribe (Tribe). Policies in the General Plan that are relevant to off-reservation biological resources are as follows:

CO.4.A. Apply appropriate mitigation measures to development projects to minimize impacts to biological resources during and after construction.

CO.4.B. Consider opportunities for habitat preservation and enhancement in conjunction with public facility projects, particularly storm drainage facilities. Construction activity involved in such preservation and enhancement shall be assessed to determine potential impacts on Coho salmon.

CO.4.C. Applicants for new development proposals shall be responsible for costs related to determining the potential for occurrence of protected plant and wildlife species within the proposed project area. City staff shall make the determination on the degree of field investigation required based on the project's location in relation to known occurrences.

CO.4.D. If the presence of protected species is determined to be likely, the project applicant shall be responsible for all costs associated with investigating species presence and preparation of any required mitigation plans.

Greenway Master Plan

The 2016 Greenway Master Plan covers an area of approximately 14.9 stream miles. As discussed previously, Yreka Creek's aquatic and riparian habitats provide valuable resources to a wide variety of fish and wildlife. Because the Master Plan involves much of the city area, the potential to adversely affect biological resources exists with implementation of the Master Plan.

All projects in the City of Yreka, including the Greenway Master Plan, are required to be consistent with the goals, objectives, and programs in the Yreka General Plan, as discussed above. The Greenway Master Plan has additional goals, objectives, or action items specifically designed to protect biological resources. Any future projects implemented as a result of adoption of the

Greenway Master Plan would be required to be consistent with the goals, objectives, and programs applicable to historical preservation in the General Plan.

The Greenway Master Plan's goals, objectives, and action items that most directly apply to the protection and improvement of biological resoruces are described under Goal 5.

Goal 5:	Achieve protection of natural resources within the Greenway Master Plan Area.
Objective 6:	To promote the protection of natural resources in the Greenway Master Plan area.
Action Item 17:	Retrofit the spillway at Greenhorn Dam to be usable as a spillway-wide fish ladder. At the top where there is a 6-foot headwall, an extension could be installed through an adjacent retaining wall and into the reservoir, not only completing the fish ladder but also providing a lake-level control structure to keep the reservoir low during the wet season for improved stormwater attenuation.
Action Item 18:	Use materials removed from the sediment basin at the head of the Greenhorn Reservoir and tailings removed along Yreka Creek as spawning gravel at selected locations below the Dam. The sediment and tailings shall be processed off-site in order to provide clean spawning gravel.
Action Item 19:	Install instream structures such as rock vanes, large woody debris, beaver dam analogues, and individual boulders and logs along existing and re-routed stream segments where fish habitat will be enhanced.
Action Item 20:	Install streambank structures such as rootwads, engineered log jams, transplanted masses of vegetation, and boulders, most notably along the outsides of bends, along existing and constructed stream segments where appropriate. It is important to note that great care needs to be taken to design instream and streambank structures in such a way that they are not likely to wash downstream and cause damage or impair flows at bridges or culverts.
Action Item 21:	Design stream channel and floodplain restoration to facilitate the expansion of beaver habitat where feasible.
Action Item 22:	Continue screen wrapping of large trees to discourage the destruction of the trees by beavers until such time that there a sufficient number of large trees to accommodate the occasional loss by beavers.
Action Item 23:	Include wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales in Greenway design where feasible. Plant species found in existing wet meadows and along existing streams in the City shall be used in constructed wet meadows.
Action Item 24:	Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, when feasible.
Action Item 25:	Retain existing native and non-native large trees in their existing locations during restoration projects to retain stream shading and viable bird habitat. Where such trees are above desired final grade in excavation areas, the trees shall be retained in-place and left on a

raised gently-sloping mound that corresponds to the root crown of the trees.

Action Item 26: Native riparian vegetation shall be used for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan. 4

Action Item 27: Native upland vegetation shall be used for all newly-constructed floodplain banks adjacent to new riparian areas. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

Action Item 28: Bioswales and ephemeral (seasonal) drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, a sterile appearance, and impeded water infiltration.

3.3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the application of the State CEQA Guidelines Appendix G thresholds of significance. A project is considered to have significant impacts on biological resources if it would:

1) 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 CDFW or the USFWS.

2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS.

3) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

4) 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.

5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

7) Reduce the number or restrict the range of an endangered, rare, or threatened plant or animal species or biotic community, thereby causing the species or community to drop below self-sustaining levels.

METHODOLOGY

The impact assessment below evaluates both the physical impacts of construction and operational effects of the components of the proposed Greenway Master Plan as well as the three projects of the Yreka Creek Flood Hazard Reduction Project on special-status species and associated habitat. The analysis evaluates both project-level and program-level components identified in Section 2.0, Project Description.

PROJECT IMPACTS AND MITIGATION MEASURES

Impacts to Candidate, Sensitive, or Special-Status Species (Standard of Significance 1)

Impact 3.3.1 Implementation of project-related activities could result in substantial adverse effects, either directly or through habitat modifications, to species identified as candidate, sensitive, or special-status species in local or regional plans, policies, regulations, or by CDFW or USFWS. These effects would be considered a **potentially significant** impact.

Greenway Master Plan

Future projects of the Greenway Master Plan may have the potential to adversely affect several special-status species, either directly or through habitat modifications. These species are Peck's lomatium, pendulous bulrush, Greene's mariposa lily, alkali hymenoxys, Shasta orthocarpus, coho salmon, steelhead, chinook salmon, foothill yellow-legged frog, western pond turtle, yellow warbler, and Cooper's hawk, as identified in **Table 3.3-1**. Implementation of the Greenway Master Plan Action Items listed below would assist in the reduction of potential impacts:

- Action Item 17: Retrofit the spillway at Greenhorn Dam to be usable as a spillway-wide fish ladder. At the top where there is a 6-foot headwall, an extension could be installed through an adjacent retaining wall and into the reservoir, not only completing the fish ladder but also providing a lake-level control structure to keep the reservoir low during the wet season for improved stormwater attenuation.

- Action Item 18: Use materials removed from the sediment basin at the head of the Greenhorn Reservoir and tailings removed along Yreka Creek as spawning gravel at selected locations below the Dam. The sediment and tailings shall be processed off-site in order to provide clean spawning gravel.

- Action Item 19: Install instream structures such as rock vanes, large woody debris, beaver dam analogues, and individual boulders and logs along existing and re-routed stream segments where fish habitat will be enhanced.

- Action Item 20: Install streambank structures such as rootwads, engineered log jams, transplanted masses of vegetation, and boulders, most notably along the outsides of bends, along existing and constructed stream segments where appropriate. It is important to note that great care needs to be taken to design instream and streambank structures in such a way that they are not likely to wash downstream and cause damage or impair flows at bridges or culverts.

- Action Item 21: Design stream channel and floodplain restoration to facilitate the expansion of beaver habitat where feasible.

- Action Item 22: Continue screen wrapping of large trees to discourage the destruction of the trees by beavers until such time that there a sufficient number of large trees to accommodate the occasional loss by beavers.

- Action Item 23: Include wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales in Greenway design where feasible. Plant species found in existing wet meadows and along existing streams in the City shall be used in constructed wet meadows.

- Action Item 24: Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, when feasible.

- Action Item 25: Retain existing native and non-native large trees in their existing locations during restoration projects to retain stream shading and viable bird habitat. Where such trees are above desired final grade in excavation areas, the trees shall be retained in-place and left on a raised gently-sloping mound that corresponds to the root crown of the trees.

- Action Item 26: Native riparian vegetation shall be used for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan. 4

- Action Item 27: Native upland vegetation shall be used for all newly-constructed floodplain banks adjacent to new riparian areas. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

- Action Item 28: Bioswales and ephemeral (seasonal) drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, a sterile appearance, and impeded water infiltration.

Compliance with the Action Items listed above would reduce the potential impacts to special-status species to a **less than significant** impact by providing long-term benefits to these species.

Flood Hazard Reduction Project

North Reach

Suitable habitat for five listed plant species occurs within the PSA. Therefore, implementation of project-related activities may result in adverse impacts to special-status plant species.

Additionally, suitable breeding habitat for foothill yellow-legged frog, western pond turtle, yellow warbler, and Cooper's hawk was identified in this reach of the PSA. Foothill yellow-legged frog, western pond turtle, yellow warbler and Cooper's hawk have been documented within 5 miles of the PSA. The presence of suitable habitat and documented occurrences in proximity to the PSA

lead to the determination that implementation of project-related activities may result in adverse impacts to these species should they be present in areas proposed for disturbance.

Central Reach

There is no suitable habitat for special-status plant species in this reach of the PSA.

Suitable habitat for yellow warbler occurs in this reach of the PSA. Additionally, Yreka Creek in this reach of the PSA may serve as a migration path for foothill yellow-legged frog and western pond turtle. Yellow warbler, foothill yellow-legged frog, and western pond turtle have been documented within 5 miles of the PSA. The presence of suitable habitat and documented occurrences in proximity to the PSA lead to the determination that implementation of project-related activities may result in adverse impacts to these species should they be present in areas proposed for disturbance.

South Reach

Suitable habitat for five listed plant species occurs within the PSA. Therefore, implementation of project-related activities may result in adverse impacts to special-status plant species.

Additionally, suitable breeding habitat for foothill yellow-legged frog, western pond turtle, and yellow warbler was identified in this reach of the PSA. Foothill yellow-legged frog, western pond turtle, and yellow warbler have been documented within 5 miles of the PSA. The presence of suitable habitat and documented occurrences in proximity to the PSA lead to the determination that implementation of project-related activities may result in adverse impacts to these species should they be present in areas proposed for disturbance.

All Three Reaches

Restoration activities proposed within Yreka Creek could potentially result in adverse impacts to spawning and rearing coho salmon and steelhead, as well as rearing chinook salmon. The majority of these impacts are considered temporary impacts, and the project would benefit these fish species in the long-run. Activities within the creek and riparian habitats have been designed to enhace stream health and habitat quality, and staging areas have been planned to be located in areas that would reduce the impact area and chance of potential pollution affecting coho salmon habitat. In addition, restoration of the Yreka Creek streambed to natural conditions would provide safe year-round passage for coho salmon, steelhead, and other wildlife, creating a positive project impact to coho salmon and other aquatic and riparian.

Notwhithstanding the expected long-term benefits of the project to anadromous fish, impacts would be considered significant if they resulted in a take of federally threatened coho. Close consultation with the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) prior to and throughout project would be required to reduce impacts to coho salmon to a less than significant level.

Impacts to these species would be considered **potentially significant**. However, mitigation measures **MM 3.3.1a** through **MM 3.3.1f** are presented below to reduce the potential impacts to a **less than significant** level.

Mitigation Measures

MM 3.3.1a **Preconstruction Plant Surveys.** The applicant shall retain qualified personnel to perform focused preconstruction surveys to determine the presence/absence of special-status plant species with potential to occur in and adjacent to (within 25 feet, where appropriate) the proposed impact area of each project component. These surveys shall be conducted in accordance with CDFW

Guidelines for Assessing Effects of Proposed Developments on Rare Plants and Plant Communities (Nelson 1994). These guidelines require that rare plant surveys be conducted at the proper time of year when rare or endangered species are both evident and identifiable. Field surveys shall be scheduled to coincide with known flowering periods and/or during appropriate developmental periods that are necessary to identify the plant species of concern and will be reviewed and accepted by the City of Yreka Planning Department prior to site disturbance or construction activity.

Timing/Implementation: *Prior to the start of project grading*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1b **Preconstruction Reptile and Amphibian Surveys.** The applicant shall retain qualified personnel to search for and relocate foothill yellow-legged frogs and western pond turtles prior to the start of any grading activities on a daily basis.

Timing/Implementation: *Prior to the start of project grading on a daily basis*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1c **Preconstruction Nesting Bird Surveys.** The applicant shall retain qualified personnel to perform focused preconstruction surveys to determine the presence/absence of nests of bird species protected under the Migratory Bird Treaty Act. These surveys shall be conducted prior to any vegetation removal taking place between March 1 and August 31. If an active nest of a non-raptor species is discovered, a 100-foot exclusionary buffer shall be installed around the nest. If an active raptor nest is discovered, a 500-foot exclusionary buffer shall be installed around the nest. These buffers shall remain in place until it is determined that the nest is no longer active.

Timing/Implementation: *During the nesting season and prior to the start of vegetation removal*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1d **Minimize Impacts to Spawning and Rearing Anadromous Fish.** The City of Yreka shall consult with NMFS and CDFW regarding potential impacts to coho salmon, and implement all conservation measures and permit requirements prescribed by those agencies, including measures designed to minimize impacts by timing construction activities to minimize potential impacts to spawning and rearing fish. Implementation of these conservation measures and permit requirements would assist in reducing potential adverse impacts to anadromous fish to a less than significant level.

Timing/Implementation: *Prior to the start of project grading*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1e **Worker Environmental Awareness Training.** The project proponent shall retain qualified personnel to conduct mandatory contractor/worker awareness training for project personnel. The awareness training will be provided to all personnel to brief them on the identified location of sensitive biological resources, including how to identify species most likely to be present and the need to avoid impacts to biological resources (e.g., plants, wildlife, and jurisdictional waters), and to brief them on the penalties for not complying with biological mitigation requirements. If new personnel are added to the project, the project proponent will ensure that they receive the mandatory training before starting work.

Timing/Implementation: *Prior to the start of project grading*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1f **Avoidance and Minimization Measures.** The following measures shall be implemented throughout project implementation:

a) To enable wildlife to pass through the project site during construction, the perimeter security fence shall leave a 4- to 5-inch opening between the fence mesh and the ground or the fence shall be raised 4 inches above the ground. The bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence.

b) To enable the movement of animals along Yreka Creek and its tributaries, any fencing that crosses the creek shall leave a gap of no less than 24 inches between the fence mesh and the bed of the channel.

c) To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If listed species are trapped, the USFWS and the CDFW shall be contacted.

d) All vertical tubes used in project construction, such as chain-link fencing poles, shall be temporarily or permanently capped at the time they are installed to avoid the entrapment and death of birds.

e) Project-related vehicles shall observe a 15 mile per hour (mph) speed limit in all project areas, except on county roads and state and federal

highways. Construction after sundown shall be prohibited. Off-road traffic outside of designated project areas shall be prohibited.

f) All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a day from the construction or project site.

g) No pets shall be allowed in project areas during active construction periods.

h) The use of herbicides for vegetation control in project areas shall be restricted. No rodenticides shall be used on the project. All uses of such herbicidal compounds shall observe label and other restrictions mandated by the US Environmental Protection Agency, California Department of Food and Agriculture, and federal and state legislation as well as additional project-related restrictions deemed necessary by the CDFW and/or the USFWS.

i) No plants or wildlife shall be collected, taken, or removed from the construction areas except as necessary for project-related vegetation removal or wildlife relocation.

Timing/Implementation: *Prior to the start of project grading and through out project construction*

Monitoring/Enforcement: *City of Yreka to Community Development Department and Public Works Department, Engineering Division*

MM 3.3.1g **Agency Notification for Presence of Sensitive Species.** During project construction, if foothill yellow-legged frogs or western pond turtles are found within the project area, temporary fencing shall be installed around the perimeter of the ground disturbance zone to prevent individuals from entering the construction zone. If the above species are found within the disturbance zone, work in the vicinity of the animal shall cease until a qualified biologist is on-site to determine the appropriate measures to be taken. Concurrent with this effort, the USFWS and the CDFW shall be consulted regarding any additional avoidance, minimization, or mitigation measures that may be necessary. Once the sensitive species is observed leaving the site, work in the area can resume. A report shall be prepared by the biologist to document the activities, and a copy of the report shall be submitted to wildlife and resource agency representatives and the City of Yreka.

Timing/Implementation: *Throughout project construction*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

Significance After Mitigation

Implementation of the proposed project may result in adverse impacts to special-status species should they be present; this is considered a **potentially significant** impact. Implementation of

mitigation measures **MM 3.3.1a** through **MM 3.3.1g** would reduce this impact to a **less than significant** level.

Impacts to Riparian Habitat or Sensitive Natural Communities (Standard of Significance 2)

Impact 3.3.2 Implementation of project-related activities would result in the disturbance, degradation, and/or removal of riparian habitat or sensitive natural communities. These effects would be considered a **potentially significant** impact.

Sensitive habitats include those that are of special concern to resource agencies and those that are protected under CEQA, Section 1600 of the Fish and Game Code, and Section 404 of the Clean Water Act. There is sensitive habitat in the project area in the form of riparian habitat. Project-related activities may adversely affect riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS.

Greenway Master Plan

Future projects of the Greenway Master Plan may have the potential to adversely affect aquatic, riparian and other sensitive habitats. Implementation of the Greenway Master Plan Action Items listed below would assist in the reduction of potential impacts:

- Action Item 20: Install streambank structures such as rootwads, engineered log jams, transplanted masses of vegetation, and boulders, most notably along the outsides of bends, along existing and constructed stream segments where appropriate. It is important to note that great care needs to be taken to design instream and streambank structures in such a way that they are not likely to wash downstream and cause damage or impair flows at bridges or culverts.

- Action Item 22: Continue screen wrapping of large trees to discourage the destruction of the trees by beavers until such time that there a sufficient number of large trees to accommodate the occasional loss by beavers.

- Action Item 23: Include wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales in Greenway design where feasible. Plant species found in existing wet meadows and along existing streams in the City shall be used in constructed wet meadows.

- Action Item 25: Retain existing native and non-native large trees in their existing locations during restoration projects to retain stream shading and viable bird habitat. Where such trees are above desired final grade in excavation areas, the trees shall be retained in-place and left on a raised gently-sloping mound that corresponds to the root crown of the trees.

- Action Item 26: Native riparian vegetation shall be used for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan. 4

- Action Item 27: Native upland vegetation shall be used for all newly-constructed floodplain banks adjacent to new riparian areas. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

- Action Item 28: Bioswales and ephemeral (seasonal) drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, a sterile appearance, and impeded water infiltration.

Compliance with the Action Items listed above would reduce the potential impacts to riparian and other sensitive habitats to a **less than significant** impact by increasing the areal extent and quality of these habitats in the PSA.

Flood Hazard Reduction Project

North Reach

Moderately healthy riparian habitat occurs within the North Reach of the PSA. There are several large, mature riparian trees in this reach, and the stream channel is less degraded here than in the other two reaches of the PSA.

Central Reach

Riparian trees occur within the Central Reach of the PSA. Since Yreka Creek is confined to a concrete channel in this reach, the riparian trees here cannot perform the functions of healthy riparian habitat without human intervention in the form of removal of the concrete that is lining the creek.

South Reach

Degraded riparian habitat occurs within the South Reach of the PSA. Most of the trees are small, weedy vegetation is abundant, and the stream channel is very incised.

Mitigation Measures

MM 3.3.2a **Retention of mature trees.** Large trees that are unable to be relocated shall be protected to the extent practicable by contouring the soil around their roots so as to enable them to survive throughout project implementation.

Timing/Implementation: *Throughout project construction*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

MM 3.3.2b **Revegetation with native trees and shrubs.** After soil contouring is complete, trees and shrubs that have been excavated from the site shall be replanted. Since the new stream corridor will be substantially larger than what exists prior to construction, additional trees and shrubs will be planted using nursery stock, and, where practical, willow stakes. These planted trees and shrubs will be watered until such time as they reach the groundwater and are able to survive in a natural state.

Timing/Implementation: *After the completion of grading*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

Significance After Mitigation

Implementation of the proposed project may result in adverse impacts to riparian habitat; this is considered a **potentially significant** impact. Implementation of mitigation measures **MM 3.3.2a** through **MM 3.3.2b** would reduce this impact to a **less than significant** level.

Impacts to Federally Protected Wetlands (Standard of Significance 3)

Impact 3.3.3 Implementation of project-related activities may result in the disturbance, degradation, and/or removal of federally protected wetlands. These effects would be considered a **potentially significant** impact.

Greenway Master Plan

Future projects of the Greenway Master Plan may have the potential to adversely affect wetlands, either directly or through habitat modifications. Implementation of the Greenway Master Plan Action Items listed below would assist in the reduction of potential impacts:

- Action Item 20: Install streambank structures such as rootwads, engineered log jams, transplanted masses of vegetation, and boulders, most notably along the outsides of bends, along existing and constructed stream segments where appropriate. It is important to note that great care needs to be taken to design instream and streambank structures in such a way that they are not likely to wash downstream and cause damage.

- Action Item 22: Continue screen wrapping of large trees to discourage the destruction of the trees by beavers until such time that there a sufficient number of large trees to accommodate the occasional loss by beavers.

- Action Item 23: Include wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales in Greenway design where feasible. Plant species found in existing wet meadows and along existing streams in the City shall be used in constructed wet meadows.

- Action Item 24: Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, when feasible.

- Action Item 26: Native riparian vegetation shall be used for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan. 4

- Action Item 28: Bioswales and ephemeral (seasonal) drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, a sterile appearance, and impeded water infiltration.

Compliance with the Action Items listed above would reduce the potential impacts to wetlands to a **less than significant** impact by increasing the areal extent and quality of wetlands in the PSA.

Flood Hazard Reduction Project

North Reach

The PSA in the North Reach contains one jurisdictional feature: Yreka Creek. There may be other jurisdictional features, but in the absence of a formal wetland delineation, the presence of additional jurisdictional features is unknown. Implementation of the proposed FHR project would have a **significant impact** on wetlands.

Central Reach

The PSA in the Central Reach contains one potentially jurisdictional feature: Yreka Creek. Because the stream channel consists of concrete, the stream channel itself is unlikely to meet the formal definition of a wetland, but there may be wetland features outside the channel itself that do meet the formal definition. Implementation of the proposed FHR project may have a **significant impact** on wetlands.

South Reach

The PSA in the South Reach contains one jurisdictional feature, Yreka Creek, and one potentially jurisdictional feature in the form of a small, manmade pond. Implementation of the proposed FHR project would have a **significant impact** on wetlands.

Mitigation Measures

MM 3.3.3 **Wetland Verification.** The project applicant shall ensure that the project will result in no net loss of federally protected waters through impact avoidance, impact minimization, and/or compensatory mitigation, as determined in CWA Section 404 and 401 permits and/or 1602 Streambed Alteration Agreement. Evidence of compliance with this mitigation measure shall be provided prior to construction and grading activities for the proposed project.

Timing/Implementation: *Prior to project construction*

Monitoring/Enforcement: *City of Yreka Community Development Department and Public Works Department, Engineering Division*

Significance After Mitigation

Implementation of the proposed project may result in adverse impacts to wetlands; this is considered a **potentially significant** impact. Implementation of mitigation measures **MM 3.3.3** would reduce this impact to a **less than significant** level.

Impacts to Wildlife Movement (Standards of Significance 4)

Impact 3.3.4 Implementation of project-related activities may adversely affect the movement of native resident or migratory fish or wildlife species or established migratory corridors. This is a **potentially significant** impact.

Greenway Master Plan

Yreka Creek and its tributaries may act as a wildlife movement corridor that not only provides habitat itself but connects larger areas of other habitat. Animals that would be expected to occur in upland areas of the PSA include deer, skunks, raccoons, coyotes, and other common mammal species. In addition, the creek channel likely serves as a movement corridor for fish, amphibians, and reptiles.

Once the project is completed, vegetation would regrow and the ability of the PSA to function as a movement corridor would be restored. However, during construction, native vegetation would be removed and the combination of lack of cover and human activity in the PSA may result in the disruption of movements of native resident and migratory wildlife.

Because construction would take place during the day and most of the species that would be affected are nocturnal animals that are somewhat habituated to human presence, it is expected that any animals that are inconvenienced by project construction would either alter their movement routes or move through the construction site unimpeded.

However, because the construction site itself may present hazards for wildlife, implementation of the proposed project may have a **significant short-term impact** on movement corridors.

Implementation of the Greenway Master Plan Action Items listed below would assist in the reduction of potential impacts:

- Action Item 17: Retrofit the spillway at Greenhorn Dam to be usable as a spillway-wide fish ladder. At the top where there is a 6-foot headwall, an extension could be installed through an adjacent retaining wall and into the reservoir, not only completing the fish ladder but also providing a lake-level control structure to keep the reservoir low during the wet season for improved stormwater attenuation.

- Action Item 19: Install instream structures such as rock vanes, large woody debris, beaver dam analogues, and individual boulders and logs along existing and re-routed stream segments where fish habitat will be enhanced.

- Action Item 20: Install streambank structures such as rootwads, engineered log jams, transplanted masses of vegetation, and boulders, most notably along the outsides of bends, along existing and constructed stream segments where appropriate. It is important to note that great care needs to be taken to design instream and streambank structures in such a way that they are not likely to wash downstream and cause damage or impair flows at bridges or culverts.

- Action Item 21: Design stream channel and floodplain restoration to facilitate the expansion of beaver habitat where feasible.

- Action Item 22: Continue screen wrapping of large trees to discourage the destruction of the trees by beavers until such time that there a sufficient number of large trees to accommodate the occasional loss by beavers.

- Action Item 23: Include wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales in Greenway design where feasible. Plant species found in existing wet meadows and along existing streams in the City shall be used in constructed wet meadows.

- Action Item 24: Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, when feasible.

- Action Item 25: Retain existing native and non-native large trees in their existing locations during restoration projects to retain stream shading and viable bird habitat. Where such trees are above desired final grade in excavation areas, the trees shall be retained in-place and left on a raised gently-sloping mound that corresponds to the root crown of the trees.

- Action Item 26: Native riparian vegetation shall be used for all restoration projects adjacent to the creeks and streams of the Greenway Master Plan area. A list of native plant species is provided in Appendix F of the Greenway Master Plan. 4

- Action Item 27: Native upland vegetation shall be used for all newly-constructed floodplain banks adjacent to new riparian areas. A list of native plant species is provided in Appendix F of the Greenway Master Plan.

- Action Item 28: Bioswales and ephemeral (seasonal) drainages shall be vegetated with native plant species in natural assemblages that provide functional wildlife habitat (mainly food and cover). These species can be selected to retain sight distance (for safety reasons), maximize aesthetics, and minimize maintenance. Use natural-looking boulders and logs, and an initial ground cover of a native seed mix followed by some form of top dressing such as mulch or wood chips. Discourage and limit the use of decorative bark or gravel/cobble over weed barriers to avoid migration of loose bark, a sterile appearance, and impeded water infiltration.

Compliance with the Action Items listed above would reduce the potential impacts to fish and wildlife and wildlife movement to a **less than significant** impact by increasing the areal extent and quality of these corridors in the PSA.

North Reach

Most of the North Reach of the PSA is undeveloped or lightly developed with few buildings and infrequent human disturbance. After construction is completed, this area would return to a vegetated state, so there would be **no long-term impact** on movement corridors. Construction of the proposed FHR project may have a **significant short-term impact** on movement corridors.

Central Reach

Although the Central Reach of the PSA is confined to a concrete channel, the channel still likely serves as a movement corridor for common wildlife species during low flows. After construction is completed, this area would be recontoured and planted with native vegetation, so there would be **no long-term impact** on movement corridors. Construction of the proposed FHR project may have a **significant short-term impact** on movement corridors.

South Reach

Although the South Reach of the PSA has more human disturbance and development than the North Reach, it still serves as a movement corridor for common wildlife species. After construction is completed, this area would be revegetated, so there would be **no long-term impact** on movement corridors. Construction of the proposed FHR project may have a **significant short-term impact** on movement corridors.

Mitigation Measures

Compliance with **MM 3.3.1e** would reduce any impacts on movement corridors to a **less than significant impact**.

Conflict with Local Policies and Ordinances (Standard of Significance 5)

Impact 3.3.5 Implementation of project-related activities would not conflict with any local policies or ordinances protecting biological resources. There is **no impact.**

The proposed project would not conflict with any local policies or ordinances protecting biological resources, including the Yreka General Plan. As such, **no impact** would occur.

Mitigation Measures

None required.

Conflict with Conservation Plans (Standard of Significance 6)

Impact 3.3.6 Implementation of project-related activities 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. There is **no impact.**

The project site is located within the Siskiyou County Valley Floor Habitat Conservation Plan planning area; however, this plan has not been adopted to date. As a result, no conflict with an adopted habitat conservation plan would occur, and **no impact** would result.

Mitigation Measures

None required.

Special-Status Species Population Impacts (Standard of Significance 7)

Impact 3.3.7 Implementation of project-related activities would not reduce the number or restrict the range of an endangered, rare, or threatened plant or animal species or biotic community, thereby causing the species or community to drop below self-sustaining levels. The impact would be **less than significant**.

Implementation of project-related activities would not reduce the number or restrict the range of an endangered, rare, or threatened plant or animal species or a biotic community, thereby causing the species or community to drop below self-sustaining levels. In addition, implementation of mitigation measures **MM 3.3.1a** through **MM 3.3.1g** would ensure that the proposed project does not reduce sensitive wildlife, habitats, and/or other biological resources below self-sustaining levels. As such, there would be a **less than significant** impact.

Mitigation Measures

No additional mitigation measures are necessary.

3.3.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The project site and the surrounding area of Siskiyou County as a whole must be considered for the purpose of evaluating land use conversion issues associated with biological resources on a cumulative level. In particular, this cumulative setting condition includes planned development under the current Land Use Element of the Yreka General Plan, existing land use conditions, and planned and proposed land uses in the vicinity of the project site, as well as consideration of development patterns in the rest of Siskiyou County. These land uses and cumulative development projects have the potential to adversely affect the biological resources in the region and could contribute to the loss of potential habitat.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts to Special-Status Species

Impact 3.3.8 The proposed project, in combination with other reasonably foreseeable projects, would not result in mortality and loss of habitat for special-status species. Implementation of the proposed prject would result in a **less than cumulatively considerable** impact.

The project would result in the temporary loss of riparian habitat and associated upland habitats that may support special-status species. However, after project completion, there would be improvement in and expansion of habitat for special-status species in the PSA, so this project would result in a **less than cumulatively considerable** impact.

Mitigation Measures

No additional mitigation measures are necessary.

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3.4 CULTURAL RESOURCES

This section provides background information on the cultural and historical background of the project area and evaluates the potential impacts of the proposed project on cultural resources. Cultural resources include historic buildings and structures, historic districts, historic resource sites, prehistoric and historic archaeological sites, and other prehistoric and historic objects and artifacts. This section is based primarily on the Cultural Resources Survey for the 2015 Yreka Creek Greenway Master Plan and Flood Hazard Reduction Project prepared for the proposed project by Resource Management in April 2016. Due to the confidential and sensitive nature of cultural resources, the report is not included in the EIR appendices, but all information needed to provide factual evidence for impact determinations is reproduced in this section. Please note that unless cited otherwise, the information on setting in this section is taken from the Cultural Resources Survey prepared by Resource Management.

3.4.1 ENVIRONMENTAL SETTING

LOCAL PREHISTORY

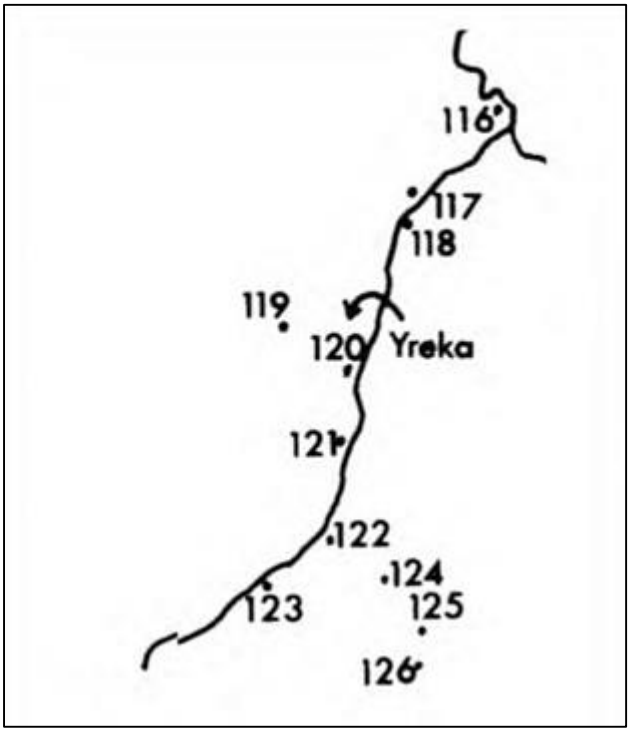
Much of the territory now known as Siskiyou County was occupied by the Shasta Indian peoples at the time of initial contact with Euro-Americans, circa 1826. The traditional territory of the Shastan peoples extended into southern Oregon and to Northern California as far south as Mount Shasta. The western boundary included Seiad Valley on the Klamath River, southwest to the New River area, and east to the area of Beswick, California. Ethnographic descriptions of the Shasta people are provided by anthropologists/ethnographers who used the assistance of surviving Shasta elders. Accounts by Euro-American travelers and settlers supplemented this information. According to information in the Cultural Resources Survey, several Shastan villages were located in the general Yreka area. One village, called *Kusta* (No. 120), may have been located at the site of present Yreka on the west side of Yreka Creek. The exact location of this village is not known and has not been documented archaeologically; it may have been destroyed either from mining, flooding, or freeway construction. Shasta informants suggest that the name may have been applied to many villages in the generalized area of Yreka and not for a single village site. Additional archaeological information documents at least one other village along Yreka Creek: *Ar-rah-ah*. This village was located north of the city at the site of present Hawkinsville on Yreka Creek.

There are few archaeological manifestations of Shasta villages in the Yreka area. A button, possibly made from a clam shell, was found at the village *O-ko-ho'-i'-wah* (No. 121). Clam shell disc beads, which had one center hole, were more commonly used on a necklace, with many disc beads and used as exchange currency. This location on a flat on Greenhorn Creek has been tentatively located on the west side of Main Street north of Ranch Lane; it is within the Greenway Master Plan area but outside the Flood Hazard Reduction (FHR) Project area.

Another reference to Indian artifacts was identified in the Siskiyou Pioneer in 1965. The article notes artifacts such as abalone shell and native Indian beads, as well as Hudson Bay beads, turned up by farm machinery from a sawmill behind Forest House Ranch. This find might be associated with the village called *Maht-te-Kwar* (*Kwaht-te-kwar*) (No. 123). This location is outside the FHR Project area. Another archaeological site—a small prehistoric lithic scatter—was recently found approximately half a mile east of Yreka Creek outside the Yreka Creek floodplain and outside the Master Plan area; it is suspected that artifacts may also be buried below the surface.

Many of the resources significant to the Shasta to support their lifeways were found in Yreka and its vicinity. The Shastan people developed a subsistence economy based on seasonal hunting, fishing, and gathering patterns. Base camps were located at key resource areas and were visited once a year, depending on the availability of the targeted subsistence resource. After the food-gathering cycle was over, they would return to their permanent villages (largely along rivers) with their food stores to spend the winters. Structures in winter villages might include rectangular multi-family dwellings, assembly houses, communal men's sweathouses, smaller communal sweathouses, and menstrual huts.

FIGURE 3.4-1
SHASTA VILLAGE SITES ALONG YREKA CREEK



Source: Resource Management 2016
Map clipped from larger version

Salmon formed a large part of the Shasta food supply. Steelhead salmon would move up the Klamath River into the Shasta River, then into Yreka Creek where there was a fall salmon run. Game of various sorts such as deer and elk, antelope, and bears were hunted for food and numerous throughout the area.

The Shasta similarly had a wide variety of plants, which supplemented their subsistence resources. In early spring (March), they would gather a variety of plants for greens and manzanita berries to make cider; April and May would be key times to gather geophytes (root and bulb plants); in August, the huckleberries in the mountains were ready; and September and October were the time to harvest acorns. In some areas, they depended heavily on fleshy root crops. Over hundreds of years of co-existence with the local flora and fauna, the Shasta developed a sophisticated knowledge of their environment that would sustain them until contact with the Euro-Americans. The project area vicinity could have been utilized seasonally as they followed their long-term pattern of hunting and gathering. Some Shasta cultural-use plants in the project vicinity were oaks, pines, elderberries, gooseberries, currants, manzanita, and deerbrush.

The Shasta used the local minerals, flora, and fauna as raw material sources for manufacturing an immense array of primary and secondary tools and implements. The collection and processing of the various food resources were accompanied with use of a wide variety of wood, bone, and stone artifacts. Only fragmentary evidence of their material culture remains. This is due in part to how perishable their belongings were, and in part to the impacts to prehistoric archaeological sites resulting from later historic land-use practices such as farming, mining, and logging.

Some pipe tips used in smoking Indian tobacco were sometimes carved out of serpentine. Rock art in the form of cupules was used for rain-making ceremonies and female fertility. The most renowned Shasta cupules rock, now located in front of the Fort Jones museum, is named the Rain Rock. House pits, middens, fire rings, hearths, and burial locations (the Shasta sometimes buried

their dead by placing rocks over them) were features typical of Shasta sites. Sometimes food was stored by piling rocks over baskets or placing them in talus pits; otherwise, food was stored in baskets or caches near the shelters. Other artifacts found in the later period (Pacific) were Gunther-barbed projectile points made out of obsidian or jasper and other cryptocrystalline silicates. Grinding stones (metates) were used for the processing of roots and other plants. Hopper/mortars were used for processing acorns.

REGIONAL HISTORY

The first Euro-Americans to pass through the locality of Yreka were the early explorers and the Hudson's Bay trappers in the mid-1820s. Among these early explorers was Peter Skene Ogden in 1926–1927. However, it wasn't until the discovery of gold by Abraham Thompson in March 1851 that the massive influx of Euro-American miners populated the early gold town of Thompson's Dry Diggings, just north of present-day Yreka. Placer deposits were found at various locations along Yreka Creek and its tributaries during the 1850s.

This sudden influx of white miners to the region was the cause of the eventual dismantling of the Shasta Indian aboriginal way of life. The Shasta Indians living in the Yreka area were hit hard with wholesale massacre, disease, and famine from the destruction of their food supply.

In 1852, Thompson's Dry Diggings mining camp was moved to its present location and was soon renamed Shasta Butte City, and then Yreka. According to the Cultural Resources Survey, the name Yreka was anglicized and came from the Shasta word *Wai'ika*, the Shasta Indian name for Mount Shasta. Early Siskiyou County history describes the beginning of the Yreka settlement with miners and setters in 1851. Soon a few public spirited men began to lay out streets for a town. Main and Miner's streets (west and north of the Central Reach) formed the heart of the town. Aside from mining, the creek area was used for cultivation. Alvy Boles started cultivating about 140 acres "along the creek" [presumably Yreka Creek], and he raised barley, wheat, corn, potatoes, cabbages, turnips, and beets.

Early travel to Yreka from the east was along the Yreka Trail, an emigrant trail pioneered in 1852. The Yreka Trail was part of the overland emigrant trail system, and it opened shortly after gold was discovered in Yreka in 1851. The trail departed from the Applegate emigrant trail and headed west toward the foot of Mount Shasta on its northeast side. The trail was used by emigrants, miners, and the military; the latter were deployed to protect overland travelers from Indian attacks. Segments of the Yreka Trail (F.S. Site No. 05-05-57-32/CA-SIS-1728H) were recorded on public and private lands by Richard Silva and the Klamath National Forest. The route of the Yreka Trail occurs within the Master Plan area, but is today Oberlin Road, a major paved street in Yreka. There are no traces of the original emigrant trail.

The natural forces of flooding of Yreka Creek helped shape the landscape surrounding it. Historic floods were a major factor shaping the city. Records indicate that in November 1861, Yreka Creek overflowed its banks and a torrent of water came rushing down Main Street. The whole lower portion of the city was under water, and all the flats and lowlands along the creek were flooded. Yreka Creek became a swiftly rolling river 300 feet wide. A similar flood occurred in 1864 and 1865.

Once the easy gold was played out, Chinese and Portuguese miners may have mined Yreka Creek and the surrounding creeks. Chinatown was eventually located on the east side of the creek in 1886 when it moved from its original locations, first on Miner Street then on Center Street.

In 1890, a heavy storm caused Yreka Creek to flood, which resulted in heavy damage to Chinatown.

Following the Chinese miners, portions of Yreka Creek were dredged. In 1899, the Yreka Creek Gold Dredging Company, owned by Edgar T. Wallace, dredge mined the area from the mouth of the Shasta River as far as Lennox Street.

In 1854, Yreka became an incorporated town. Yreka can attribute its beginning and growth as the county seat to its ability to act as a hub for trade for the miners in the area during the 1850s to the 1870s. Because of the location as a business center, Yreka became the county seat for Siskiyou County. To further solidify Yreka's importance in Siskiyou County, in 1889 the Yreka Western Railroad was built to link the town to the mainline of the Southern Pacific Railroad to the east (in the Montague area). A remnant of this railroad is within the FHR Project area. This venture proved to be advantageous to Yreka's growth as a commercial center for Northern California. East and southeast of Yreka/Hawkinsville, the broad Shasta Valley filled with cattle ranches. With big irrigation projects after 1900, the volcanic soil of this semi-arid vicinity produced substantial crops of alfalfa hay. The initial incursion of Euro-American miners and lumbermen soon led to the arrival of Chinese and Kanaka (Hawaiian) laborers, as well as ranchers, and businessmen to supply goods and materials to the mines and farms.

Lumber mills and sawmills were booming in the Yreka area after World War II. The Pine Mountain Lumber Company was one of the mills created during this boom. Pine Mountain Lumber Company was a northern subsidiary of Penberthy Lumber Company, which acquired the property in the late 1930s. The Yreka facility included sawing, milling, drying, and shipping capabilities. The mill initially cut softwoods for the war effort and later expanded into an exotic lumber market. Remnants of the Pine Mountain Lumber Mill are located outside the Master Plan area and the FHR Project area, with the majority of building concentrating around Sharps Road; a few buildings are also located south of Oberlin Road.

PROJECT AREA PALEONTOLOGY

Paleontological resources include mineralized (fossilized) or unmineralized bones, teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

A search was made of the University of California's Museum of Paleontology's online database on July 5, 2016, to identify paleontological resources from the Yreka area (UC Berkeley 2016). The database search indicates that no fossils have been recorded in or near the project site. A total of 96 fossils have been recovered from other parts of Siskiyou County. Five fossil localities in Siskiyou County are in Quaternary Alluvium deposits, which is the geological formation mapped for the project area. From these five localities, all of which date to the Pleistocene epoch, several Rancholabrean Age (240,000–11,000 years before present) specimens are identified: *Euceratherium collinum* (scrub-ox), *Camelops hesternus* (western camel), *Mammut americanum* (American mastodon), *Mammuthus* sp. (mammoth), and Cyprinidae (minnow family).

3.4.2 REGULATORY SETTING

FEDERAL

National Historic Preservation Act of 1966

The National Historic Preservation Act of 1966 requires that the federal government list significant historic resources on the National Register of Historic Places (NRHP). Federal agencies must consult the NRHP when planning to undertake or grant approval through permits for a project. Prior to the issuance of any license or implementation of any project, the federal agency must consider the effects of a project or license on any historical buildings, sites, structures, or objects that are included on, or eligible for inclusion on, the NRHP (16 United States Code Section 470(f)). This typically includes consultation with the federal agency responsible for the undertaking, the state historic preservation officer, local Native American groups and individuals, local and state historical societies and organizations, and relevant archival sources, including the appropriate facility of the California Historical Resources Information System.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) states that "[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" (Public Resources Code Section 21084.1; 14 California Code of Regulations Section 15063.4). A significant historical resource (including both a prehistoric and historic resource) is one that is found eligible for listing in the California Register of Historical Resources. Per the CEQA Guidelines, historical resources are those that are:

- Listed in, or eligible for listing in, the California Register of Historical Resources (Public Resources Code (PRC) 5024.1, Title 14 California Code of Regulations, Section 4850 et seq.);
- Listed in, or eligible for listing in, the National Register of Historic Places;
- Included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g); or
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Additionally, historical resources and historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance can also be listed in the California Register of Historical Resources (CRHR), if the criteria for listing under the ordinance have been determined by the Office of Historic Preservation to be consistent with CRHR criteria adopted by the State Historical Resources Commission (pursuant to PRC Section 5024.1(e)).

A resource may be listed as a historical resource in the California Register if it has integrity and meets any of the following four criteria:

1) Associated with events that has made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;

2) Associated with the lives of persons important to local, California, or national history;

3) Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or

4) Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

CEQA (PRC Section 21083.2) also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as outlined above, and unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2) Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Buildings, sites, structures, objects, and districts representative of California and United States history, architecture, archaeology, engineering, and culture convey significance when they also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A resource has integrity if it retains the characteristics that were present during the resource's period of significance. Enough of these characteristics must remain to convey the reasons for its significance.

Paleontological resources are classified as nonrenewable scientific resources and are protected by state statute (PRC Chapter 1.7, Section 5097.5, Archeological, Paleontological, and Historical Sites, and Appendix G). No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth-moving on state or private land on a project site.

LOCAL

City of Yreka General Plan

The Yreka General Plan 2002–2022 includes programs requiring protection of scenic views and areas of scenic value. Program LU.12.A requires an archaeological record search on all

discretionary projects, on land not previously developed or approved for a parcel map or subdivision. Program LU.12.B requires that if during the course of disturbance of a project site human remains are discovered, construction must stop immediately and such find reported to the county coroner. Program LU.12.C requires that the exterior modification or demolition of any building located outside of the historic district which was constructed prior to 1910, not occur until it has been determined that such modification or demolition will not cause any significant impact to a historic resources.

3.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

CEQA Guidelines Appendix G states that a project may have a significant effect on the environment if the project would result in any of the following:

1) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15063.4.

2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15063.4.

3) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4) Disturb any human remains, including those interred outside of formal cemeteries.

METHODOLOGY

An archaeological survey was conducted on December 4, 2015, February 16, 2016, and April 13, 2016 by archaeologist Kathleen Tyler and her crew member, Cal Fire certified archaeologist surveyor George Jennings. A field trip overview of the project was conducted by Julie Cassidy and Kathleen Tyler on February 4, 2016, and the central reach was revisited on April 4, 2016, with Klamath National Forest (KNF) archaeologists and Yreka Creek Committee members. Based on previous documentation and the fact that Yreka Creek and the surrounding area have been heavily disturbed by erosive floods and a variety of human activities over the past 150 years, the project area would point to a low level of sensitivity to locate prehistoric and historic sites and features with adequate integrity.

Field survey work involved slow-paced pedestrian coverage of the entire project area while searching for prehistoric or historic features or artifacts on the ground surface. Although grass/forb ground cover was often dense in places, mineral soil was exposed in substantial-sized areas situated throughout the FHR Project area.

When possible, investigation of most of the FHR Project, consisting of 84 acres, was accomplished with 20-meter transects, and sometimes with closer transects because of the unevenness of the terrain and vegetation. This investigation incorporated an intensive-level pedestrian survey of exposed soil within the entire acreage of the project. A cursory survey was limited to wet areas and to places where blackberry bushes limited visual inspection. The survey was completed by

two surveyors. KNF archaeologists completed a survey on Forest Service lands within the project's Central Reach.

The survey conditions were variable. Survey in the Yreka Creek riparian zone was difficult; the vegetation, mainly blackberries, and transient camp spots hampered visibility of the ground. The riparian zone was thickly vegetated. Within the North Reach, the vegetation was so tall and thick it was hard to see the bare ground, other than in very limited areas. Much of the ground surface has been covered by spoils of dirt, rock, or asphalt. The former hay fields were covered with non-native species of grasses, and the surface soils could only be seen in rodent holes. Within the South Reach, even though there was a layer of yellow star thistle and grasses, the ground was visible during the survey. Next to the creek where there is an abundance of vegetation, the riparian zone was difficult to survey because of little ground visibility and thick impassable vegetation.

Records Checks

The Northeast Center of the California Historical Resources Information System (CHRIS) was contacted on October 16, 2015, regarding the potential cultural resources and archaeological surveys within or near the project area. Yreka's Miner Street Historic District, which includes numerous nineteenth and early twentieth century commercial, civic, and residential structures, is not within the Master Plan area or the FHR Project area.

The Klamath National Forest surveyed the KNF Service Center property in the Central Reach for the Yreka Greenway project. No sites were found during this survey. The historic buildings (1934–1940) in the Service Center compound were originally determined as eligible for the National Register of Historic Places but were subsequently altered to such a degree that they were determined ineligible by the Forest Service (Resource Management 2016, p. 14).

A total of six surveys, including the KNF survey, were done within the FHR Project area or in the immediate surrounding area and two previously recorded sites are within the FHR Project area. None of the surveys identified resources that were eligible historic resources.

Native American Consultation

Native American consultation letters were sent to two federally recognized tribes: the Quartz Valley Indian Reservation in Fort Jones, and the Karuk Tribe of California (Housing Authority in Yreka). A response was received from the Quartz Valley Indian Reservation, which had no cultural concerns with the project. There was no response from the Karuk Tribe. A letter was also sent to the Shasta Nation (a non-federally recognized tribe); no response has been received to date.

The Native American Heritage Commission (NAHC) listed both the Quartz Valley Indian Reservation and the Shasta Nation as Native American communities which have specified that they either have or may have interest in archaeological, cultural, or traditional issues in the Yreka vicinity. A search of its files by the NAHC for this project found no "Sacred Land" areas or issues, nor any other known areas or issues of cultural, archaeological, or traditional interest.

The following definitions are common terms used to discuss the regulatory requirements and treatment of cultural resources:

- *Cultural resources* is the term used to describe several different types of properties: prehistoric and historical archaeological sites; architectural properties such as buildings, bridges, and infrastructure; and resources of importance to Native Americans.

- *Historic properties* is a term defined by the National Historic Preservation Act as any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register of Historic Places, including artifacts, records, and material remains related to such property.

- *Historical resource* is a CEQA term that includes buildings, sites, structures, objects, or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance and is eligible for listing or is listed in the California Register of Historical Resources.

- *Paleontological resource* is defined as including fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. A unique paleontological site would include a known area of fossil-bearing rock strata.

PROJECT IMPACTS AND MITIGATION MEASURES

Historic and Prehistoric Resources (Standards of Significance 1 and 2)

Impact 3.4.1 The project site is located in an area containing existing historic resources. This impact would be **potentially significant**.

Greenway Master Plan

The 2016 Greenway Master Plan covers an area of approximately 14.9 stream miles. As discussed previously, Yreka has a varied historical past including Native American, Euro-American, gold mining, lumber production, railroad, and other historical elements. Because the Master Plan involves much of the city area, the potential to affect known and unknown cultural resources exists with implementation of the Master Plan.

All projects in the city, including the Greenway Master Plan, are required to be consistent with the goals, objectives, and programs in the Yreka General Plan. While the Greenway Master Plan Implementation Strategy does not have goals, objectives, or action items specifically designed to protect cultural resources, the General Plan has a number of them. Any future projects implemented as a result of adoption of the Greenway Master Plan would be required to be consistent with the goals, objectives, and programs applicable to historical preservation in the General Plan, as listed below.

Goal LU.12: To protect and preserve the historical resources of the City of Yreka.

Objective: The City has taken significant steps in the past to protect its historic resources through the creation of a historic district. Such action is important since history is an important part of Yreka's character and economy. Preservation of the historic resources within the established historic district occurs through the application of a separate review process and application of standards focused on preserving the architectural style of the late 1800s and early 1900s.

It is the objective of this goal to maintain this process and expand protection to other historic structures and archaeological resources that are located elsewhere in the community outside of the historic district.

Program LU.12.A: An archaeological record search shall be required on all discretionary projects, on land not previously developed or approved for a parcel map or subdivision. This record shall be supplied by the applicant, to determine if there is the potential for archaeological resources on the project site. If the record search determines there is a high probability of such resources, an on-site investigation shall occur by a professional approved by the City.

Program LU.12.B: If during the course of disturbance of a project site human remains are discovered, construction shall stop immediately and such find reported to the County Coroner. Work on the site with the potential for disturbing such remains shall not occur until authorized by the Coroner.

Program LU.12.C: The exterior modification or demolition of any building located outside of the Historic District which was constructed prior to 1910, shall not occur until it has been determined that such modification or demolition will not cause any significant impact to a historic resources.

Future projects of the Greenway Master Plan would be required to be in accordance with General Plan goals, objectives, and programs designed to protect historical resources in the city. Specifically, compliance with Programs LU.12.A and LU.12.C would protect known historical resources in the Greenway Master Plan area.

Flood Hazard Reduction Project

The records search results indicated that six previous cultural resources studies were conducted within the FHR Project area or in the immediate surrounding area. **Table 3.4-1** identifies the previous studies and their findings.

TABLE 3.4-1
PREVIOUSLY RECORDED SITES CONTAINING CULTURAL RESOURCES

Date	Reference	Location of the Survey	Reach/Survey Description	Findings
2005	Jim Rock – Yreka Creek RV Park Project	T 45 North, Range 7 West, Section 23	North Reach[1]	No sites
2007	John Nadolski, Pacific Municipal Consultants	T 45 North, Range 7 West, Section 27	South Reach-adjacent	Ineligible sites[2]
2009	Sean Michael Jensen	T 45 North, Range 7 West, Sections 23	North Reach-adjacent	No sites[3]
2012	Jeff LaLande, Candy Cook-Slette, Pacific Municipal Consultants	T 45 North, Range 7 West, Section 23	North Reach	No sites

2015	Heritage Stewardship Group – KNF Service Center	T 45 North, Range 7 West, Section 27	Central Reach[4]	No sites
2015	William Rich and Associates	T 45 North, Range 7 West, Sections 34 and 35	South and east of the South Reach	Yreka Western Railroad preliminarily ineligible for the National Register; Pine Mountain Lumber Company drying sheds found ineligible for the National Register

Source: Resource Management 2016, p. 14
Notes:
1. *The survey area is described as reclaimed dredge tailings. "The tailings were leveled, and it appears that fill dirt was placed on top of these leveled tailings."*
2. *Tailings, collapsed concrete bridge abutments crossing Yreka Creek, and concrete foundations of a former auto repair shop.*
3. *Wastewater treatment facility built in 1953 determined ineligible. Not within or adjacent to FHR Project area.*
4. *The survey revealed approximately 95% of the surface is "either black-topped or graveled. The banks of Yreka Creek are covered top-to-bottom with concrete."*

Two historic properties were found in the FHR Project area. These include:

1. F. S. 05-05-62-641 – the Klamath National Forest Service Center compound. Seven buildings were built by the Forest Service and the Civilian Conservation Corp in 1934 and 1940. They were originally thought to be eligible for the National Register under Criterion A, as tangible evidence of the federal response to the Great Depression and of Civilian Conservation Corps construction activities in northwest California. In 2012, they were subsequently determined by the Forest Service and the California State Historic Preservation Officer to be no longer eligible because of changes that compromised their integrity of design such that they did not evoke any association with the historic context of the Civilian Conservation Corps era.

2. A segment of the Yreka Western Railroad now completely dismantled. This short segment is 0.16 mile long north of Oberlin Road adjacent to the South Reach of the project boundary and considered within the FHR Project's South Reach; it continues northward and southward outside the FHR Project area. A few ties can be seen haphazardly thrown along the segment. The site has not yet been assigned a primary number.

Other items observed during the survey included two obsidian flakes, not in-situ. They were found in the gravel surface of a recently scraped dirt road on private land; the owner is currently using the area to load and haul soil amendments. Various modern trash was found in the form of abundant chunks (and piles) of fragmented concrete, asphalt, and ceramic drain pipe; lengths of rusted wire-rope cable; nails, bolts, and other ferrous-metal connectors; sections of galvanized pipe; plastic-coated electrical wire; miscellaneous automotive parts; and numerous shards of bottle glass and window glass.

In the small sliver of a man-made drainage in the most northeastern area of the South Reach, a thick shard (~1.2 inches and ~1.6 inches square) of clear glass was found. The use is unknown, possibly used in the railcar windows; the Yreka Western Union Railroad tracks are immediately adjacent to the east.

Though no prehistoric or historic resources were found during the cultural resources survey, there is a possibility of unanticipated and accidental cultural resource discoveries during ground-

disturbing project-related activities. Unanticipated and accidental cultural resource discoveries during project implementation have the potential to negatively affect significant cultural resources. These "inadvertent discoveries" can appear unexpectedly in construction trenches or in back dirt piles, and once discovered, they require special treatment. As such, the project would have a potentially significant impact on cultural resources without proper mitigation. As such, mitigation measure **MM 3.4.1** is required in order to address the potential impacts.

Mitigation Measures

MM 3.4.1 If, during the course of project implementation and/or operations, cultural resources (i.e., prehistoric sites, historic features, isolated artifacts, and features such as concentrations of shell or glass) are discovered, work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department shall be immediately notified, and a professional archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery. The City shall consider mitigation recommendations presented by a professional archaeologist and implement a measure or measures that the City deems feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

Timing/Implementation: *During the construction period*

Monitoring/Enforcement: *City of Yreka Public Works Department*

Implementation of mitigation measure **MM 3.4.1** would reduce project impacts to undiscovered prehistoric and historic resources to a **less than significant** level.

Prehistoric Resources and Human Remains (Standards of Significance 2 and 4)

Impact 3.4.2 Implementation of the proposed project could indirectly result in the potential disturbance of undiscovered cultural resources (i.e., prehistoric sites and isolated artifacts and features) and unrecorded human remains. This impact would be **potentially significant**.

Greenway Master Plan

As discussed previously, Yreka has a varied historical past including Native American, Euro-American, gold mining, lumber production, railroad, and other historical elements. Because the Master Plan involves much of the city area, the potential to affect known and unknown cultural resources exists with the implementation of the Master Plan. However, compliance with existing General Plan goals, objectives, and programs listed under Impact 3.4.1 would reduce the potential to impact cultural resources to a less than significant level.

Flood Hazard Reduction Project

Resource Management contacted the NAHC to request a search of the Sacred Lands File for the project site and further contacted all persons or organizations on the NAHC contact list by letter

to request information on unrecorded cultural resources that may exist within the current project site or to inquire about any concerns regarding sacred sites or traditional cultural properties in the vicinity that might be affected by the proposed action. This outreach failed to indicate the presence of Native American cultural resources located within the project site. In addition, the intensive systematic pedestrian survey conducted on the project site determined that given the level of previous disturbance, the potential for subsurface historic-period cultural resources is considered low (Resource Management 2016, p. 16).

Regardless, the potential exists for the proposed construction activities to disturb previously unknown prehistoric resources and unrecorded human remains on the site. Prehistoric materials might include flaked stone tools, tool-making debris, bedrock mortars and other stone milling tools, fire-affected rock, basketry, shell or bone artifacts, or soil darkened by cultural activities (midden). These inadvertent discoveries can appear unexpectedly in construction trenches or in back dirt piles and once discovered, they require special treatment. In addition, California Health and Safety Code Section 7050.5(b) specifies protocol when human remains are discovered. The following mitigation measure provides more specific requirements to be implemented in the event prehistoric resources and/or human remains are discovered. Mitigation measure **MM 3.4.2** is required to reduce the significance of the impact.

Mitigation Measures

MM 3.4.2 If, during the course of project construction, human remains are discovered, all work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department shall be immediately notified, and the county coroner must be notified, according to California Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in California Code of Regulations Section 15064.5(d) and (e) shall be followed.

Timing/Implementation: *During the construction period*

Monitoring/Enforcement: *City of Yreka Public Works Department*

Implementation of mitigation measures **MM 3.4.1** and **MM 3.4.2** would reduce impacts to a **less than significant** level.

Paleontological Resources (Standard of Significance 3)

Impact 3.4.3 Implementation of the proposed project could inadvertently result in the potential disturbance of paleontological resources (i.e., fossils and fossil formations) on the project site. This impact would be **potentially significant**.

Greenway Master Plan

As the executive director of the Northern California Natural History Museum at California State University, Chico [called the Gateway Science Museum since 2009], Greg Liggett (2006) compiled a list of discovered vertebrate fossils in Northern California. This list, titled An Overview of Vertebrate Paleontology in Northern California: Localities, Taxa, and Potential, concluded that Northern California contains relatively few fossiliferous outcrops. Those that exist are interspersed among the

remote and rugged igneous and metamorphic landscape that rings the Sacramento Valley. Northern California is arbitrarily defined here as the northernmost 28 counties of the state, the roughly 55,000 square miles north of Sacramento, comprising an area approximately equal to the state of New York (Liggett 2006). While the vast majority of these finds are from the Bay Area and Sacramento River Delta area, six specimens were found in Siskiyou County. Three of these specimens are in the general area of Yreka. Compliance with existing General Plan goals, objectives, and programs listed under Impact 3.4.1 would reduce the potential to impact cultural resources to a less than significant level.

Flood Hazard Reduction Project

Based on the area and the environmental setting outlined in the cultural resources survey, paleontological resources within the FHR Project reaches are not likely. There were no indicators of such during the field surveys and paper research completed by Resource Management.

While no paleontological resources were identified in the cultural resources survey, as discussed above, paleontological resources have been found in the general Yreka area. As such, excavations may uncover significant vertebrate fossils. Therefore, this is considered a potentially significant impact, and mitigation measure **MM 3.4.3** is required.

Mitigation Measures

MM 3.4.3 If, during the course of project construction, paleontological resources (e.g., fossils) are discovered, work shall be halted immediately within 50 feet of the discovery, the City of Yreka Public Works Department shall be immediately notified, and a qualified paleontologist shall be retained to determine the significance of the discovery. The City shall consider the mitigation recommendations presented by a professional paleontologist and implement a measure or measures that the City deems feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

Timing/Implementation: *During the construction period*

Monitoring/Enforcement: *City of Yreka Public Works Department*

Implementation of this mitigation measure would reduce impacts to a **less than significant** level.

3.4.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting includes existing land use conditions and planned development in Yreka and the surrounding area of Siskiyou County. The cumulative effect of development projects will result in a net loss of rural historic landscapes and their associated sites and features. Similarly, proposed projects in the vicinity of Yreka and Siskiyou County could damage undiscovered paleontological resources in these areas.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Impacts on Prehistoric and Historic Resources/Human Remains (Standards of Significance 1, 2, and 4)

Impact 3.4.4 Implementation of the project, along with any foreseeable development in the project vicinity, could contribute to cumulative impacts to historic, prehistoric, and previously undiscovered human remains. This is considered a **potentially cumulatively considerable** impact.

Implementation of the project, in combination with cumulative development in Yreka and Siskiyou County, would increase the potential to reduce historic and prehistoric resources in the area and would increase the potential to encounter previously undiscovered human remains. As noted above, the project itself is expected to result in less than significant impacts with mitigation incorporated.

Mitigation Measures

Implementation of mitigation measures **MM 3.4.1** and **MM 3.4.2** would reduce the project's contribution to cumulative impacts to historic and prehistoric resources (see impact discussions above). These impacts are considered to be **less than cumulatively considerable**.

Cumulative Paleontological Resources (Standard of Significance 3)

Impact 3.4.5 Implementation of the project, along with any foreseeable development in the project vicinity, could result in cumulative impacts to undiscovered paleontological resources in areas surrounding the project site, both in Yreka and in Siskiyou County. This is considered a **potentially cumulatively considerable** impact.

Implementation of the project, in combination with other development in the region, could result in the loss of paleontological resources in the region if mitigation is not implemented.

Mitigation Measures

Implementation of mitigation measure **MM 3.4.3** would reduce the project's contribution to cumulative impacts to paleontological resources to a **less than cumulatively considerable** level.

REFERENCES

Liggett, Greg, 2006. *An Overview of Vertebrate Paleontology in Northern California: Localities, Taxa, and Potential.* http.//gregliggett.com/pubs/SVP_2006.pdf.

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3.5 Greenhouse Gases and Climate Change

This section discusses the project's effect on greenhouse gas (GHG) emissions and the associated effects of climate change. The reader is referred to Section 3.2, Air Quality, for a discussion of project impacts associated with air quality.

3.5.1 ENVIRONMENTAL SETTING

Since the early 1990s, scientific consensus holds that the world's population is releasing GHGs faster than the earth's natural systems can absorb them. While the merits of this concensus may be debated in some circles, CEQA requires consideration of potential effects on the phnomenom. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to a warming of the earth and has the potential to severely impact the earth's climate system.

While often used interchangeably, there is a difference between the terms *climate change* and *global warming*. According to the National Academy of Sciences, climate change refers to any significant, measurable change of climate lasting for an extended period of time that can be caused by both natural factors and human activities. Global warming, on the other hand, is an average increase in the temperature of the atmosphere caused by increased GHG emissions. Use of the term *climate change* is becoming more prevalent because it encompasses all changes to the climate, not just temperature.

To fully understand global climate change, it is important to recognize the naturally occurring greenhouse effect and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that would have otherwise escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect.

Among the prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, and N_2O. **Table 3.5-1** describes the primary GHGs attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

TABLE 3.5-1
GREENHOUSE GASES

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
Methane (CH_4)	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
Nitrous Oxide (N_2O)	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. Nitrous oxide is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1] EPA 2011a, [2] EPA 2011b, [3] EPA 2010

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

As the name implies, global climate change is a global problem. Greenhouse gases are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern, respectively. California is a significant emitter of CO_2e in the world and produced 459 million gross metric tons of CO_2e in 2012 (CARB 2014). Consumption of fossil fuels in the transportation sector was the single largest source of California's GHG emissions in 2010, accounting for 36 percent of total GHG emissions in the state (CARB 2014). This category was followed by the electric power sector (including both in-state and out-of-state sources) (21 percent) and the industrial sector (19 percent) (CARB 2014).

EFFECTS OF GLOBAL CLIMATE CHANGE

California can draw on substantial scientific research conducted by experts at various universities and research institutions. With more than a decade of concerted research, scientists have established that the early signs of climate change are already evident in the state—as shown, for example, in increased average temperatures, changes in temperature extremes, reduced snowpack in the Sierra Nevada, sea level rise, and ecological shifts.

Many of these changes are accelerating locally, across the country, and around the globe. As a result of emissions already released into the atmosphere, California will face intensifying climate change in coming decades (CNRA 2009). Generally, research indicates that California should expect overall hotter and drier conditions, with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea-level rise. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing (CNRA 2009).

Climate change temperature projections identified in the 2009 California Climate Adaptation Strategy suggest the following:

- Average temperature increase is expected to be more pronounced in the summer than in the winter season.
- Inland areas are likely to experience more pronounced warming than coastal regions.
- Heat waves are expected to increase in frequency, with individual heat waves also showing a tendency toward becoming longer and extending over a larger area, thus more likely to encompass multiple population centers in California at the same time.
- Because GHGs remain in the atmosphere for decades, temperature changes over the next 30 to 40 years are already largely determined by past emissions. By 2050, temperatures are projected to increase by an additional 1.8 to 5.4°F (an increase one to three times as large as that which occurred over the entire twentieth century).
- By 2100, the models project temperature increases between 3.6 and 9°F. (CNRA 2009)

According to the 2009 California Climate Adaptation Strategy, the impacts of climate change in California have the potential to include but are not limited to the areas discussed in **Table 3.5-2**.

TABLE 3.5-2
POTENTIAL STATEWIDE IMPACTS FROM CLIMATE CHANGE

Potential Statewide Impact	Description
Public Health	Climate change is expected to lead to an increase in ambient (i.e., outdoor) average air temperature, with greater increases expected in summer. Larger temperature increases are anticipated in inland communities as compared to the California coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Numerous studies have indicated that there are generally more deaths during periods of sustained higher temperatures. The elderly, infants, and socially isolated people with pre-existing illnesses who lack access to air conditioning or cooling spaces are among the most at risk during heat waves.
Floods and Droughts	The impacts of flooding may include population displacement, severe psychosocial stress with resulting mental health impacts, exacerbation of pre-existing chronic conditions, and infectious disease. Additionally, impacts can range from a loss of personal belongings, and the emotional ramifications from such loss, to direct injury and/or mortality. Drinking water contamination outbreaks in the United States are associated with extreme precipitation events. Runoff from rainfall is also associated with coastal contamination that can lead to contamination of shellfish and contribute to food-borne illness. Floodwaters may contain household, industrial, and agricultural chemicals, as well as sewage and animal waste. Flooding and heavy rainfall events can wash pathogens and chemicals from contaminated soils, farms, and streets into drinking water supplies. Flooding may also overload storm and wastewater systems, or flood septic systems, also leading to possible contamination of drinking water systems. Drought impacts develop more slowly over time. Risks to public health that Californians may face from drought include impacts on water supply and quality, food production (both agricultural and commercial fisheries), and risks of waterborne illness. As surface water supplies are reduced as a result of drought conditions, the amount of groundwater pumping is expected to increase to make up for the water shortfall. The increase in groundwater pumping has the potential to lower the water tables and cause land subsidence. Communities that utilize well water will be adversely affected by drops in water tables or through changes in water quality. Groundwater supplies have higher levels of total dissolved solids compared to surface waters. This introduces a set of effects for consumers, such as repair and maintenance costs associated with mineral deposits in water heaters and other plumbing fixtures, and on public water system infrastructure designed for lower salinity surface water supplies. Drought may also lead to increased concentration of contaminants in drinking water supplies.
Water Resources	The state's water supply system already faces challenges to provide water for California's growing population. Climate change is expected to exacerbate these challenges through increased temperatures and possible changes in precipitation patterns. The trends of the last century, especially increases in hydrologic variability, will likely intensify in this century. The state can expect to experience more frequent and larger floods and deeper droughts. Rising sea level will threaten the Delta water conveyance system and increase salinity in near-coastal groundwater supplies.
Forests and Landscapes	Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, wildfire occurrence statewide could increase from 57 percent to 169 percent by 2085. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state.

Source: CNRA 2009

3.5.2 REGULATORY SETTING

California has adopted various administrative initiatives and legislation relating to climate change, much of which set aggressive goals for GHG emissions reductions in the state. Although lead agencies must evaluate climate change and greenhouse gas emissions of projects subject to the California Environmental Quality Act (CEQA), the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or specific thresholds of significance and do not specify GHG reduction mitigation measures. Instead, the guidelines allow lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. In addition, no state agency has promulgated binding regulations for analyzing greenhouse gas emissions, determining their significance, or mitigating significant effects in CEQA documents. Thus, lead agencies exercise their discretion in determining how to analyze and mitigate GHGs.

CALIFORNIA GLOBAL WARMING SOLUTIONS ACT (ASSEMBLY BILL 32)

The primary acts that have driven GHG regulation and analysis in California include the California Global Warming Solutions Act of 2006 (AB 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), which instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The act directed CARB to set a greenhouse gas emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.

AB 32 Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of Assembly Bill (AB) 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business as usual" and/or "No Action Taken"). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of year 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.

- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, and the Low Carbon Fuel Standard.

- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB 2008).

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relies on emissions projections updated in light of current economic forecasts that account for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This reduced the projected 2020 emissions from 596 million metric tons (MMT) CO_2e to 545 $MMTCO_2e$. The reduction in projected 2020 emissions means that the revised No Action Taken (NAT) reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent. CARB also developed a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from NAT needed to achieve the goals of AB 32 is approximately 16 percent.

AB 32 requires CARB to update the Scoping Plan at least once every five years. CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG reduction necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal established in Executive Order S-3-05, though not yet adopted as state law, and observes that "a mid-term statewide emission limit will ensure that the State stays on course to meet our long-term goal." The Scoping Plan update does not establish or propose any specific post-2020 goals, but identifies such goals adopted by other governments or recommended by various scientific and policy organizations. **Table 3.5-3** provides a brief overview of the other California legislation relating to climate change that may affect the emissions associated with the proposed project.

In addition to the legislation identified in **Table 3.5-3**, two Executive Orders, California Executive Order 5-03-05 (2005) and California Executive Order B-30-15 (2015), highlight GHG emissions reduction targets, though such targets have not been adopted by the State and remain only a goal of the Executive Orders. Specifically, Executive Order 5-03-05 seeks to achieve a reduction of GHG emissions of 80 percent below 1990 levels by 2050 and Executive Order B-30-15 seeks to achieve a reduction of GHG emissions of 40 percent below 1990 levels by 2030. Technically, a governor's Executive Order does not have the effect of new law but can only reinforce existing laws. For instance, as a result of the AB 32 legislation, the State's 2020 reduction target is backed by the adopted AB 32 Scoping Plan, which provides a specific regulatory framework of requirements for achieving the 2020 reduction target. The State-led GHG reduction measures identified in **Table 3.5-3**, such as the Low Carbon Fuel Standard and the Renewables Portfolio Standard, are largely driven by the AB 32 Scoping Plan. Executive Orders S-03-05 and B-30-15 do not have any such framework and therefore provide no emissions reduction mechanisms that can be applied to the analysis of land use projects for the purpose of meaningful emissions estimates.

TABLE 3.5-3
CALIFORNIA STATE CLIMATE CHANGE LEGISLATION

Legislation	Description
Assembly Bill 1493 and Advanced Clean Cars Program	Assembly Bill 1493 ("the Pavley Standard," or AB 1493, 2005) (Health and Safety Code Sections 42823 and 43018.5) aimed to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.
Low Carbon Fuel Standard (LCFS)	Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The regulation took effect in 2010 and is codified at Title 17, California Code of Regulations, Sections 95480–95490. The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020.
Renewables Portfolio Standard (Senate Bill X1-2)	California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. As an interim measure, the RPS requires 25 percent of retail sales to be sourced from renewable energy by 2016.
Senate Bill 375*	Senate Bill (SB) 375 (codified in the Government Code and the Public Resources Code) took effect in 2008 and provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires metropolitan planning organizations (MPOs) to incorporate a Sustainable Communities Strategy in their Regional Transportation Plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.
California Building Energy Efficiency Standards	In general, the California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The California Energy Commission recently adopted changes to the 2013 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code) and associated administrative regulations in Part 1 (collectively referred to here as the standards). The amended standards took effect in the summer of 2014. The 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. The standards offer builders better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.
California Green Building Standards	The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code was adopted in 2013 and went into effect July 1, 2014.

** Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01, as well as at Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.*

3.5.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Per Appendix G of the CEQA Guidelines, impacts related to climate change are normally considered significant if implementation of the proposed project would result in the following:

1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

METHODOLOGY

The resultant GHG emissions of the proposed project were calculated using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, computer program (see **Appendix 3.5**). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. Because the impacts of GHG emissions are not experienced locally, the focus of the climate change analysis is on the project's potential contributions to the cumulative impact.

IMPACTS AND MITIGATION MEASURES

Generation of Greenhouse Gas Emissions (Standards of Significance 1 and 2)

Impact 3.5.1 The proposed project could generate greenhouse gas emissions. This is considered a **less than cumulatively considerable** impact.

None of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions; therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. The project does not propose any new buildings and therefore no permanent source of stationary source or indirect source emissions. In addition, as determined in Section 3.9, Effects Found Not to Be Significant, once completed the project would not result in a permanent increase in traffic. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor. Traffic conditions after the project is constructed are expected to be the same as or slightly better than as existing traffic conditions. Therefore, new permanent stationary, indirect source, or mobile sources of GHG emissions will not be quantified, as the project would not result in such emissions.

The proposed project would result in the temporary generation of emissions resulting from excavation, material hauling, direct creek work, and worker trips.

Greenway Master Plan

Predicted construction-generated GHG emissions associated with all of the future projects under the 2016 Greenway Master Plan are summarized in **Table 3.5-4**. Project-level variability and uncertainties exist related to future individual projects in terms of detailed plans and construction schedules, which are not currently determined. For the purposes of this analysis, it is assumed that all future projects (see **Table 2.0-1**) would occur simultaneously.

TABLE 3.5-4
FUTURE GREENWAY MASTER PLAN PROJECTS CONSTRUCTION EMISSIONS (TOTAL METRIC TONS)

Construction Phase	CO_2e
Future Greenway Master Plan Projects[1]	
Creek Work & Movement of Structures	**3,007**

*Source: CalEEMod 2013.2.2 (see **Appendix 3.5**)*

Note: 1. Emission projections account for the disturbance of 40 acres of land, movement of 422,026 cubic yards of dirt, and movement of 175 structures (22 homes and main buildings, 41 outbuildings, 75 small sheds, and 37 storage yards).

Flood Hazard Reduction Project

Predicted construction-generated GHG emissions associated with the three proposed reach projects of the Flood Hazard Reduction Project, totaling approximately 45 acres, are summarized in **Table 3.5-5**.

TABLE 3.5-5
FLOOD HAZARD REDUCTION PROJECT CONSTRUCTION EMISSIONS (TOTAL METRIC TONS)

Construction Phase	CO_2e
Central Reach[1]	
Central Reach Totals	917
North Reach[2]	
North Reach Totals	967
South Reach[3]	
South Reach Totals	1,774
All Projects Combined (Total Tons)	
Central, North, and South Reach Combined Totals	**3,658**

*Source: CalEEMod 2013.2.2 (see **Appendix 3.5**)*

Notes:

1. *Emission projections account for the removal of 65,340 square feet of asphalt and a retaining wall totaling 1,610 tons of demolished material. Emission projections also account for the disturbance of 4.4 acres of land, movement of 89,000 cubic yards of dirt, movement of seven structures, construction of 11,370 square feet of replacement roadways, and reconfiguration of 0.8 acres of parking lots.*
2. *Emission projections account for the disturbance of 13.4 acres of land, movement of 89,450 cubic yards of dirt, movement of two structures, and construction of 35,910 square feet of new roadways.*
3. *Emission projections account for the disturbance of 27.6 acres of land, movement of 301,000 cubic yards of dirt, and movement of nine structures.*

As shown in **Table 3.2-5**, the Central Reach, North Reach, and South Reach projects would generate a combined 3,658 metric tons of CO_2e throughout the entirety of construction.

Construction-generated GHG emissions are short term and of temporary duration, lasting only as long as construction activities occur. Once construction activities are completed, the generation of GHG emissions cease. Furthermore, none of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions; therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable GHG emissions from long-term

operations. Therefore the project would not result in long-term operational GHG emissions. For these reasons, the proposed project would be considered to represent a **less than cumulatively considerable** impact concerning the generation of GHG emissions. In addition, project components would not conflict with the state goals or in any state policies adopted to reduce GHG emissions.

Mitigation Measures

None required.

REFERENCES

CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan Appendices* (Appendix F).

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EPA (US Environmental Protection Agency). 2010. *Nitrous Oxide*. http://www.epa.gov/nitrousoxide/scientific.html.

———. 2011a. *Climate Change – Greenhouse Gas Emissions: Carbon Dioxide*. http://www.epa.gov/climatechange/emissions/co2.html.

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3.6 GEOLOGY AND SOILS

3.6 GEOLOGY AND SOILS

This section discusses the current geologic and soil conditions of the project site and in the general vicinity and evaluates potential impacts related to geology and soils with implementation of the proposed project. The impact analysis focuses on seismic hazards, soil stability, and soil erosion. Section 3.9, Hydrology and Water Quality, provides further discussion of soil erosion as it relates to surface water quality. This section is based in part on soils data obtained from the Natural Resources Conservation Service Web Soil Survey and the City of Yreka General Plan.

3.6.1 ENVIRONMENTAL SETTING

REGIONAL AND SITE GEOLOGY

California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize eleven provinces in California. Each region displays unique, defining features based on geology, faults, topographic relief, and climate.

The Yreka Greenway Master Plan is situated along Yreka Creek. The creek, a tributary to the Shasta River, is located in the Klamath River Basin at the margin between the Klamath Mountains and Cascade Range geologic/geomorphic provinces of California. The Klamath Mountains province extends from the northern end of the California Coast Ranges north into Oregon. It is bounded to the east by the Cascade Range province, to the south by the Coast Ranges and Great Valley provinces, to the west by the Pacific Ocean, and to the north by the Coast Ranges of Oregon. It is estimated that the province encompasses approximately 11,800 square miles. The Klamath Mountains have rugged topography with prominent peaks and ridges reaching 6,000–8,000 feet above sea level. In the western Klamath, an irregular drainage is incised into an uplifted plateau called the Klamath peneplain. The uplift has left successive benches with gold-bearing gravels on the sides of the canyons. The Klamath River follows a circuitous course from the Cascade Range through the Klamath Mountains. The province is considered to be a northern extension of the Sierra Nevada (CGS 2002a).

The Cascade Range province extends from the northern end of the Sierra Nevada north to the Canadian border. In the project site vicinity, the Cascade Range province is bounded to the west by the Klamath Mountain province, to the east by the Modoc Plateau province, to the south by the Sierra Nevada province, and to the north by the Cascade Range extending through Oregon and Washington. The Cascade Range province consists of a north-northwest–trending, relatively linear belt of active and dormant strata and shield volcanoes. It is dominated by Mount Shasta, a glacier-mantled volcanic cone, rising 14,179 feet above sea level. The southern termination is Lassen Peak, which last erupted in the early 1900s. The Cascade Range is transected by the deep canyons of the Pit River. The river flows through the range between these two major volcanic cones, after winding across interior Modoc Plateau on its way to the Sacramento River (CGS 2002a).

Surface Conditions

Located in the Shasta Valley at 2,500 feet above sea level, most of Yreka is developed on alluvial soils consisting of gravelly, clay, and sandy loams. Typically these soils have moderate shrink-swell characteristics, have slight to moderate erosion hazard potential, and contain slopes which range from 0 to 9 percent. A network of streams and mountain ranges contribute to Yreka's varying topography.

Yreka Creek Historical Conditions

As a part of the proposed project, a geomorphic analysis was completed for the Yreka Creek floodway. The analysis found that the historic floodplain extent and pattern varied as a function of drainage area, valley shape, stream gradient, and bed and bank material properties. The upper portion of the Yreka Creek subwatershed has relatively steep valleys and stream channels cut into the Klamath Mountains' geology. The historic floodplain of these source channels was narrow and V-shaped. The lower portion of Yreka Creek is relatively flat with broad valley bottoms and relatively flat stream channels in the Quaternary Alluvium geology. The floodplain in these pool-riffle channels was likely wide and braided and meandered across the valley floor (GeoServ 2016, p. 8).

The portion of the Yreka Creek subwatershed that is now the city was developed around 1850. Roads and structures were built along the creek and represent the first channel alterations. At the same time, the areas where Yreka and Greenhorn creeks flow through Quaternary Alluvium were being heavily dredge mined. Hard rock and tunnel mining were also occurring throughout the valley. As part of development and mining, the channel location was moved laterally and vertically. Historical evidence suggests that at one time the flow of Yreka Creek was conveyed through a tunnel under the town. There are several known abandoned tunnels, shafts, and wells within the city limits, and most of them convey groundwater.

After the late 1800s, the once wide and sinuous channel form was replaced with narrow straight channels. Yreka Creek became a perennially entrenched alluvial channel and the rate of incision increased.[1] The depth of incision and scour were a function of the occurrence of large floods and bed and bank material strength. Urban structure, roads, and dredger tailing piles directed the flow patterns of Yreka Creek from lower Greenhorn Creek downstream to the confluence with the Shasta River. The coarse and armored nature of the dredger tailings held the Yreka Creek channel laterally. Since then, the channel has adjusted vertically through the process of incision (GeoServ 2016, p. 10).

Project Site Soils

The US Department of Agriculture Natural Resources Conservation Service (NRCS) provides soil information for areas throughout the United States. The NRCS's online soils mapping tool, called the Web Soil Survey, is an interactive tool that can provide a variety of soil-related information for a user-defined specific site.

Greenway Master Plan Soils

The Web Soil Survey was used to determine the soil types for the Greenway Master Plan area. As shown in **Table 3.6-1**, the NRCS (2016) identifies the major soil type within the Greenway Master Plan as "Dumps." Dumps are areas of smoothed or uneven accumulations or piles of waste rock and general refuse. In the case of Yreka Creek, the Dumps soil is most likely an accumulation of tailings from past mining operations.

[1] Channel incision is the process of downcutting into a stream channel leading to a decrease in the channel bed elevation.

TABLE 3.6-1
GREENWAY MASTER PLAN AREA SOIL CHARACTERISTICS

Soil Type	Percentage
Dumps	54.8%
Dunzel gravelly loam, 5 to 9 percent slopes	3.7%
Dunzel-Jilson-Facey complex, 15 to 50 percent slopes	10.8%
Lithic Xerothents-Rock outcrop complex, 0 to 65 percent slopes	1.5%
Stoner gravelly sandy loam, 2 to 5 percent slopes	14.8%
Xerofluvents, nearly level	0.8%
Dotta gravelly loam, 0 to 2 percent slopes	3.3%
Dotta gravelly loam, 2 to 5 percent slopes	2.2%
Stoner gravelly sandy loam, 0 to 2 percent slopes	0.0%
Facey loam, 5 to 15 percent slopes	1.8%
Rock outcrop-Dubakella complex, 30 to 50 percent slopes	0.3%
Stoner gravelly sandy loam, 5 to 15 percent slopes	4.0%
Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes	1.9%
Weitchpec variant-Rock outcrop complex, 5 to 65 percent slopes	0.0%
	100.0%

Source: NRCS 2016

A survey of soil for different areas of the Master Plan was also collected using the Web Soil Survey. As shown, Yreka Creek, Humbug Creek, and Greenhorn Creek all have varying percentages of Dumps soil. Interestingly, Juniper Creek does not have any Dumps soil.

TABLE 3.6-2
GREENWAY MASTER PLAN AREA BY LOCATION SOIL CHARACTERISTICS

Location and Soil Type	Percentage of Area	Location and Soil Type	Percentage of Area
Yreka Creek – from WWTP north to Master Plan limits		**Yreka Creek – from I-5/Yreka Creek overpass south to Master Plan limits**	
Dumps	65.3%	Dotta gravelly loam, 0 to 2 percent slopes	29.0%
Dunzel gravelly loam, 5 to 9 percent slopes	2.1%	Dotta gravelly loam, 2 to 5 percent slopes	9.2%
Dunzel-Jilson-Facey complex, 15 to 50 percent slopes	28.5%	Stoner gravelly sandy loam, 0 to 2 percent slopes	0.2%
Lithic Xerothents-Rock outcrop complex, 0 to 65 percent slopes	3.3%	Stoner gravelly sandy loam, 2 to 5 percent slopes	9.6%
Stoner gravelly sandy loam, 2 to 5 percent slopes	0.4%	Xerofluvents, nearly level	7.3%
Xerofluvents, nearly level	0.4%	Dumps	44.8%
	100.0%		100.0%

Location and Soil Type	Percentage of Area	Location and Soil Type	Percentage of Area
Yreka Creek – from WWTP south to I-5/Yreka Creek overpass		**Humbug Creek**	
Dotta gravelly loam, 2 to 5 percent slopes	9.6%	Dumps	11.5%
Dumps	76.1%	Dunzel gravelly loam, 5 to 9 percent slopes	11.2%
Facey loam, 5 to 15 percent slopes	13.0%	Rock outcrop-Dubakella complex, 30 to 50 percent slopes	1.6%
Stoner gravelly sandy loam, 2 to 5 percent slopes	1.3%	Stoner gravelly sandy loam, 2 to 5 percent slopes	54.4%
	100.0%	Stoner gravelly sandy loam, 5 to 15 percent slopes	21.3%
			100.0%
Upper Greenhorn Creek – from Greenhorn Reservoir west to Master Plan limits		**Lower Greenhorn Creek – from Greenhorn Dam east to Yreka Creek**	
Dumps	67.0%	Dumps	96.9%
Dunzel gravelly loam, 5 to 9 percent slopes	5.1%	Dunzel-Jilson-Facey complex, 15 to 50 percent slopes	0.9%
Lithic Xerothents-Rock outcrop complex, 0 to 65 percent slopes	1.4%	Stoner gravelly sandy loam, 2 to 5 percent slopes	2.2%
Marpa-Kinkel-Boomer, cool complex, 15 to 50 percent slopes	11.5%		100.0%
Stoner gravelly sandy loam, 2 to 5 percent slopes	14.8%	**Juniper Creek**	
Weitchpec variant-Rock outcrop complex, 5 to 65 percent slopes	0.2%	Dotta gravelly loam, 0 to 2 percent slopes	41.7%
	100.0%	Stoner gravelly sandy loam, 2 to 5 percent slopes	58.3%
			100.0%

Source: NRCS 2016

Flood Hazard Reduction Project Soils

According to the NRCS, the South and Central reaches of the Flood Hazard Reduction (FHR) Project are classified as Dumps, which in this particular instance consists of waste rock associated with dredging. Given the unknown nature of the parent material, the NRCS does not provide any details as to permeability, runoff potential, erosion hazard, or shrink-swell characteristics. The North Reach contains approximately 67.5 percent Dumps; 16.6 percent of the soils in the North Reach are classified as Dotta gravelly loam, 13.9 percent Facey loam, and 2 percent Stoner gravelly loam (**Appendix 3.6**). **Table 3.6-3** summarizes the characteristics of the soil types present in the FHR Project area.

The FHR Project soils are all considered to be well drained. The Web Soil Survey also identifies the runoff potential for the soils on the three FHR Project reaches. According to this survey, the soils have a low runoff potential and slight to moderate slopes (2 to 15 percent), as shown in **Table 3.6-3**. As a whole, the soil composition of the three reaches has a rare frequency of flooding, and linear extensibility (shrink-swell) ranges from low to moderate (NRCS 2016).

TABLE 3.6-3
FHR PROJECT SOIL CHARACTERISTICS

Soil	Percentage of Site	Drainage	Flooding Frequency Class	Erosion Hazard	Runoff Potential	Linear Extensibility[1]
North Reach						
Dotta gravelly loam, 2 to 5 percent slopes	16.9%	Well drained	None	Slight	Moderate	1.5%
Dumps	67.5%	Excessively drained	None	Not Rated	Not Rated	Not Rated
Facey loam, 5 to 15 percent slopes	13.9%	Well drained	None	Slight	Moderate	2.6%
Stoner gravelly sandy loam, 2 to 5 percent slopes	2.0%	Well drained	None	Slight	Low	1.5%
Central Reach						
Dumps	100%	Excessively drained	None	Not Rated	Not Rated	Not Rated
South Reach						
Dumps	100%	Excessively drained	None	Not Rated	Not Rated	Not Rated

Source: NRCS 2016

1. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

FAULTING AND SEISMICITY

Earthquakes can cause strong ground shaking that may damage property and infrastructure. The strength of an earthquake is generally expressed in two ways: magnitude and intensity. The magnitude is a measure that depends on the seismic energy radiated by the earthquake as recorded on seismographs. The intensity at a specific location is a measure that depends on the effects of the earthquake on people or buildings and is used to express the severity of ground shaking.

The most commonly used magnitude scale today is the moment magnitude (Mw) scale. Moment magnitude is related to the physical size of fault rupture and the movement (displacement) across the fault, and it is therefore a more uniform measure of the strength of an earthquake. The seismic moment of an earthquake is determined by the resistance of rocks to faulting multiplied by the area of the fault that ruptures and by the average displacement that occurs across the fault during the earthquake. The seismic moment determines the energy that can be radiated by an earthquake and hence the seismogram recorded by a modern seismograph (CGS 2002b).

The most commonly used scale to measure earthquake intensities (ground shaking and damage) is the Modified Mercalli Intensity (MMI) Scale, which measures the intensity of an earthquake's effects

in a given locality and is based on observations of earthquake effects at specific places. On the MMI Scale, values range from I to XII (see **Table 3.6-4**). While an earthquake has only one magnitude, it can have various intensities, which decrease with distance from the epicenter (CGS 2002b).

Table 3.6-4 provides descriptions of the effects of ground shaking intensities, along with a general range of moment magnitudes that are often associated with those intensities.

TABLE 3.6-4
EFFECTS OF RICHTER MAGNITUDE AND MODIFIED MERCALLI INTENSITY

Mw	Modified Mercalli Scale	Effects of Intensity
1.0–3.0	I	I. Not felt except by a very few under especially favorable conditions.
3.0–3.9	II–III	II. Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing. III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
4.0–4.9	IV–V	IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably. V. Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
5.0–5.9	VI–VII	VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. VII. Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.
6.0–6.9	VIII–IX	VIII. Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed. IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
7.0 and higher	X or higher	X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks. XI. Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly. XII. Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.

Source: CGS 2002b

Faults are classified as active and potentially active. An active fault is one that has had surface displacement within Holocene time (about the last 11,000 years), while a potentially active fault is one that has been active during Quaternary time (last 1,600,000 years). These definitions are used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Geologic Hazards Zones Act. The intent of this act is to ensure that development does not occur across the traces of active faults (DOC 2007).

Area Seismic Activity

Several earthquake faults exist in the Yreka area as indicated on the 2010 Fault Activity Map of California (CGS 2010). Some notable faults include the Greenhorn Fault north of the city and the Soap Creek Ridge Fault to the southwest. One small fault has been identified in the northern portion of the city near the junction of Interstate 5 and State Route 3. None of these faults have shown evidence of any activity within the last 1.6 million years. The nearest recently active faults are the Cedar Mountain Fault Zone 35 miles east in the Hebron-Macdoel area and a fault located approximately 99 miles east in the Klamath Falls area (CGS 2010).

The Seismic Safety and Safety Element of the Siskiyou County General Plan (1975) states that over a 120-year period, nine or ten earthquakes capable of "considerable damage" have occurred in the region. No deaths have been reported from these quakes, and building damage was considered minor or unreported. No known damage has resulted from an earthquake in the Yreka area.

3.6.2 REGULATORY SETTING

FEDERAL AND STATE

Uniform Building Code

The purpose of the Uniform Building Code (UBC) is to establish minimum standards to preserve the public peace, health, and safety by regulating the design, construction, quality of materials, certain equipment, location, grading, use, occupancy, and maintenance of all buildings and structures. UBC standards address foundation design, shear wall strength, and other structural-related conditions.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface of active faults. The act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Seismic Hazards Mapping Act (discussed below) addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 directs the California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking.

The purpose of the act is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards.

Staff geologists in the Seismic Hazard Zonation Program gather existing geological, geophysical, and geotechnical data from numerous sources to produce the Seismic Hazard Zone Maps. They integrate and interpret these data regionally in order to evaluate the severity of the seismic hazards and designate as Zones of Required Investigation those areas prone to liquefaction and earthquake-induced landslides.

California Building Code

The State of California provides minimum standards for building design through the California Code of Regulations, Title 24, also known as the California Building Standards Code or the California Building Code (CBC). The CBC is based on the Uniform Building Code but modifies UBC regulations for specific conditions found in California and includes a large number of more detailed and/or more restrictive regulations.

For example, the CBC includes common engineering practices requiring special design and construction methods that reduce or eliminate potential expansive soil-related impacts. The CBC requires structures to be built to withstand ground shaking in areas of high earthquake hazards and the placement of strong motion instruments in larger buildings to monitor and record the response of the structure and the site of seismic activity. Compliance with CBC regulations ensures the adequate design and construction of building foundations to resist soil movement. In addition, the CBC contains drainage requirements in order to control surface drainage and to reduce seasonal fluctuations in soil moisture content.

LOCAL

City of Yreka General Plan

The Yreka General Plan (2003) includes policies and action programs intended to minimize public risk associated with seismic hazards and unstable soils. The Public Health and Safety Element contains policies and programs that reduce the potential impacts of seismic and geologic hazards in the city. For example, Program PH.5.A states that the City may require a soils report for development projects within areas of identified soils limitations. Program PH.5.B requires that probing for underground caverns be conducted for buildings three stories or higher. Program PH.5.C requires that public buildings and areas of mass assembly be constructed to meet seismic safety standards. Finally, Program PH.5.E requires the City to make available to development projects the location maps of cave-ins and the expected location of abandoned mine shafts.

City of Yreka Municipal Code

Sections 12.20.080 and 15.04.100 of the Yreka Municipal Code require that a subdivider file a preliminary soil report with the Director of Public Works prior to the submission of a final subdivision map. If the preliminary soil report indicates the presence of critically expansive soils or other soil problems that, if not corrected, would lead to structural defects, a soil investigation of each lot in the subdivision must be prepared by a civil engineer registered by the State of California.

3.6.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

California Environmental Quality Act (CEQA) Guidelines Appendix G states that a project may have a significant effect on the environment if the project would result in any of the following:

1) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

    i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

    ii) Strong seismic ground shaking.

    iii) Seismic-related ground failure, including liquefaction.

    iv) Landslides.

2) Result in substantial soil erosion or the loss of topsoil.

3) 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.

4) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

METHODOLOGY

The following impact analysis is based on the available seismic information from the California Department of Conservation, the California Geological Survey, and Geoscience Services, as well as on soils data obtained from the NRCS Web Soil Survey and other relevant materials, as appropriate.

PROJECT IMPACTS AND MITIGATION MEASURES

Strong Seismic Ground Shaking and Seismic-Related Ground Failure (Standards of Significance 1 and 3)

Impact 3.6.1 There are no seismically active regions in close proximity to the project site, and no Alquist-Priolo Fault-Rupture Hazard Zones are mapped in the city or in Siskiyou County. Any impacts attributable to rupture of a known earthquake

fault or other strong seismic ground shaking that would occur as a result of the proposed project would be **less than significant**.

Greenway Master Plan and Flood Hazard Reduction Project

The potential for impacts as a result of strong seismic ground shaking and seismic-related ground failure would be an area-wide phenomenon and not specific to one site; therefore, discussion of these impacts is combined for the Greenway Master Plan and the Flood Hazard Reduction Project.

Fault Rupture

Surface fault rupture typically occurs on or in close proximity to the causative fault. It is defined as displacement at the earth's surface resulting from fault movement associated with an earthquake. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Future faulting is generally expected along different strands of the same fault. There are no Alquist-Priolo Earthquake Fault Rupture Hazard Zones mapped in Siskiyou County (CGS 2016). Therefore, the potential for damage due to direct fault rupture is considered unlikely. Thus, impacts would be **less than significant**.

Seismic Ground Shaking

The project site is not located within an Alquist-Priolo Fault Zone as identified by the California Geological Survey (CGS). The nearest active fault system is the Cedar Mountain Fault Zone, located approximately 35 miles east of the project site. The Cedar Mountain Fault has shown evidence of activity within the last 10,000 years.

According to the Earthquake Shaking Potential for California map produced by the CGS (2008), the project site is located in the area described as follows: "these regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here."

The City of Yreka adopted the California Building Code in Chapter 11 of the Yreka Municipal Code. Development of the project site would be required to comply with the current adopted CBC, which includes design criteria for seismic loading and other geologic hazards, including design criteria for geologically induced loading that govern sizing of structural members and provide calculation methods to assist in the design process. While shaking impacts could be potentially damaging, they would also tend to be reduced in their structural effects due to compliance with applicable CBC criteria that recognize this potential. The CBC includes provisions for buildings to be constructed in a manner to structurally survive an earthquake without collapsing and includes measures such as anchoring to the foundation and structural frame design.

Compliance with the structural standards contained in the CBC would minimize risks to the public from strong seismic ground shaking and would ensure that impacts are **less than significant.**

Liquefaction

Liquefaction and seismically induced settlement typically occur in loose granular soils and low-cohesive silts and clays with relatively shallow groundwater. During an earthquake, ground shaking causes a rapid increase in the pore water pressure within the soil mass and a corresponding decrease in the soil's effective stress, which can result in a sudden loss of soil-bearing strength. Liquefaction potential has been found to be the greatest where the groundwater level is within a depth of 50 feet and loose fine sands or low plastic silts and clays occur within that depth.

According to the soil data acquired from the Web Soil Survey reports and the City's General Plan, the soil types and general geology of Yreka are not conducive to liquefaction. Thus, the potential for impacts from liquefaction are **less than significant**.

Seismic Settlement

One of the most common phenomena that occur during a seismic event is the induced settlement of loose, unconsolidated sediments, which can occur in unsaturated and saturated granular soils. Any future buildings or structures constructed as a part of implementation of the Greenway Master Plan or the Flood Hazard Reduction Project would be required to comply with the California Building Code. Compliance with the CBC seismic building standards would reduce impacts to a **less than significant** level.

Landslides

A landslide is the downhill movement of masses of earth material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. This process typically involves the surface soil and an upper portion of the underlying bedrock. Expansive soil on slopes tends to shrink and swell in response to moisture content changes. During this shrinking and swelling process, gravity tends to work the soil down slope. Movement may be very rapid or so slow that a change of position can be noted only over a period of weeks or years (creep). The size of a landslide can range from several square feet to several square miles.

Landslides are not prominent in the project area, since the mountains of the region consist of stable bedrock material with little likelihood of sliding. While Yreka is in an area having undulating and varying topography, standard construction practices limit the amount of potential erosion, and the California Building Code addresses necessary construction techniques to accommodate soils in the area with expansive characteristics. There are no slopes in the immediate vicinity of the project that would affect the project site. There would be **no impact** from landslides at the project site.

Subsidence, Collapse, and Lateral Spreading

Land surface subsidence and collapse can be induced by both natural and human phenomena. Natural phenomena include subsidence resulting from tectonic deformations and seismically induced settlements, soil subsidence from consolidation, hydro compaction, rapid sedimentation subsidence from oxidation or dewatering of organic-rich soils, and subsidence related to subsurface cavities. Subsidence and collapse related to human activity includes subsurface fluid or sediment withdrawal. Pumping of water for residential, commercial, and agricultural uses from

subsurface water tables causes the majority of the identified subsidence in the United States. The US Geological Survey (USGS) has identified areas of California that have been areas of subsidence. The majority of these areas are located in the Central Valley and are the result of groundwater pumping. According to the USGS (2016), the Yreka area is not identified as an area of land subsidence. As such, the project is considered to have **no impact**.

Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. The potential for failure from subsidence and lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high. Based on these attributes, lateral spreading could occur within the Greenway Master Plan and the FHR Project area. Although future projects of the Greenway Master Plan would result in the relocation of existing buildings and the FHR Project would result in the moving of one building, the moving of these buildings away for the creek would lessen the potential for impacts to structures or people as a result of lateral spreading, as these structures would be farther away from areas of potential lateral spreading. As such, the project would have a **less than significant** impact related to lateral spreading.

Mitigation Measures

None required.

Erosion and Loss of Topsoil (Standard of Significance 2)

Impact 3.6.2 Construction of the proposed project would require grading, excavating, and other ground-disturbing activities that would expose topsoil, resulting in soil erosion. However, implementation of standard erosion control measures would ensure this impact is **less than significant**.

Greenway Master Plan

According to the NRCS (2016), as shown in **Table 3.6-1**, the Greenway Master Plan area consists of a variety of soil types as would be expected in an area of this size. Different soils have varying potential for erosion based on many factors. While the potential for erosion in the Master Plan area, because of future projects, cannot be fully determined at this time, construction would most likely include land clearing, grading, excavating, and other soil-disturbing activities. These activities may potentially result in exposing site soils to wind and water erosion. In addition, construction activities may involve the use of water, which may further erode the topsoil as the water moves across the surface.

All construction activities would be required to comply with CBC Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion. In addition, the project applicant would be required to prepare and comply with a stormwater pollution prevention plan (SWPPP) that provides a schedule for the implementation and maintenance of erosion control measures and a description of erosion control practices, including appropriate design details and a time schedule. The SWPPP would consider the full range of erosion control best management practices (BMPs), including any additional site-specific and seasonal conditions. As further discussed further in Section 3.8, Hydrology and Water Quality, the State Water Resources Control Board adopted a Construction General Permit (Order No. 2009-

0009-DWQ) and associated amendments that establish additional standards and requirements to avoid soil erosion.

Compliance with CBC Chapter 70 standards, as well as implementation of an approved SWPPP, would minimize the potential for soil erosion on the project site. Therefore, this impact would be **less than significant**.

Flood Hazard Reduction Project

As shown in **Table 3.6-3,** the majority of soils in the FHR Project's three reaches are made up of mostly "Dumps," which, as defined by the NRCS, are areas of smoothed or uneven accumulations or piles of waste rock and general refuse. In the case of Yreka Creek, the Dumps soil is most likely an accumulation of tailings from past mining operations. Because of the variety of materials that make up the Dumps soil category, the erodibility of the soil is not rated. However, as with other projects in the Greenway Master Plan, construction activities within the FHR Project area would be required to comply with CBC Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion. In addition, the project applicant would be required to prepare and comply with a SWPPP that provides a schedule for the implementation and maintenance of erosion control measures and a description of erosion control practices, including appropriate design details and a time schedule.

Compliance with CBC Chapter 70 standards, as well as implementation of an approved SWPPP, would minimize the potential for soil erosion on the project site. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

Expansive Soils (Standard of Significance 4)

Impact 3.6.3 Project site soils were determined to have little expansion potential. This impact would be **less than significant**.

Greenway Master Plan

Expansive soils can shrink and swell with drying and wetting. Soils with high clay content tend to be the most affected. The shrink-swell potential of expansive soils can result in differential movement beneath foundations which in turn cause damage to the building structure. Expansive soils can also cause damage to roadways, resulting in premature failure of the roadway structure.

According to the USGS (1989, Yreka is located in an area with soils containing little or no swelling clay. As such, the potential for future projects within the Greenway Master Plan area to be affected by expansive soils is **less than significant**.

Flood Hazard Reduction Project

The potential for site-specific expansive soils can be determined by the linear extensibility of the site's soils. The linear extensibility of a soil is used to determine the shrink-swell potential of that soil.

As shown in **Table 3.6-3**, the most prominent soil in the FHR Project area is Dumps, representing 67.5 percent of the soil in the North Reach and 100 percent of the soil in the Central and South reaches. However, the linear extensibility of Dumps cannot be determined because the soil is made up of a variety of different materials. In the Yreka Creek area, the Dumps soil type consists of an accumulation of tailings from past mining operations. Tailings are the materials left over after the process of separating the extracted soil to valuable fractions and uneconomic fraction of an ore. Because the Yreka area soils are considered to have a low potential for expansion, as discussed above, tailings from past mining operations would also have a low potential for expansion. As such, the potential for impacts to the proposed FHR Project from expansive soils would be **less than significant**.

Mitigation Measures

None required.

Soils Incapable of Adequately Supporting the Use of Septic Tanks (Standard of Significance 5)

Impact 3.6.4 Project wastewater systems have not been determined at this time. However, Yreka General Plan programs require connection to existing wastewater facilities. The project would have **no impact.**

Greenway Master Plan

Future projects of the Master Plan may include the construction of restroom facilities at the Oberlin Trailhead. However, all new projects in Yreka within 600 feet of an existing sewer line are required to connect to the City's wastewater facilities. Existing sewer lines are adjacent to the Oberlin Trailhead. The use of septic systems would not be permitted. As such, the Master Plan would have **no impact** in this area.

Flood Hazard Reduction Project

The FHR Project does not include the construction of any facilities that would require the use of wastewater facilities. No septic systems would be developed as a part of the FHR Project. Therefore, the FHR Project would have **no impact** in this area.

Mitigation Measures

None required.

3.6.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

Impacts associated with geology and soils generally are site-specific (determined by a particular site's soil characteristics, topography, and proposed land uses), rather than cumulative in nature. Individual development projects would be subject to, at a minimum, uniform site development and construction standards relative to seismic and other geologic conditions that are prevalent in the region. Impacts regarding surficial deposits, namely erosion and sediment deposition, can

be cumulative in nature in a watershed. The reader is referred to Section 3.9, Hydrology and Water Quality, regarding cumulative water quality impacts from soil erosion.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Geologic, Seismic, and Soil Hazards

Impact 3.6.5 Development of the proposed project, in combination with other past, present, and reasonably foreseeable future development in the region as assumed under buildout of the General Plan, could result in the cumulative exposure of persons and structures to geologic hazards as well as cumulative soil erosion. However, compliance with applicable laws and regulations and common engineering practices would ensure that future development is not adversely impacted by significant geologic hazards and that soil erosion is minimized to the extent feasible. This impact would be **less than cumulatively considerable.**

All new development in the Greenway Master Plan would be required to comply with the CBC, Yreka's Municipal Code, Greenway Master Plan goals, objectives, and action items, and General Plan policies, which mandate stringent earthquake-resistant design parameters and common engineering practices requiring special design and construction methods that reduce or eliminate potential expansive soil and soil settlement–related impacts. Furthermore, future development would be required to comply with the then-current CBC Chapter 70 standards to minimize soil erosion and to prepare a site plan detailing appropriate methods of erosion and deposition control, in addition to preparing a SWPPP to obtain coverage under the state's General Construction Permit. Compliance with these existing regulations would minimize the potential for soil erosion in the city. Therefore, these impacts will not combine to form a greater cumulative effect and are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

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3.7 Hazards and Hazardous Material

3.7 HAZARDS AND HAZARDOUS MATERIALS

This section provides information on hazardous materials and safety hazards potentially relevant to the project site and surrounding properties. The impact analysis focuses on the potential for the proposed project to create hazards to public health or the environment related to hazardous materials, airport operations, emergency access, and wildland fire. In addition, while not considered an impact to the physical environment by the California Environmental Quality Act (CEQA), the potential for public safety concerns resulting from increased use of the Greenway Master Plan and Flood Hazard Reduction (FHR) Project areas is discussed in this section.

3.7.1 ENVIRONMENTAL SETTING

HAZARDOUS MATERIALS AND WASTE DEFINED

Under Title 22 of the California Code of Regulations (CCR), the term *hazardous substance* refers to both hazardous materials and hazardous wastes, and both are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity (CCR Title 22, Chapter 11, Article 3). A hazardous material is defined as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness or may pose a substantial presence or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of or otherwise managed.

Public health is potentially at risk whenever hazardous materials are or will be used. It is necessary to differentiate between the hazard of these materials and the acceptability of the risk they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure, in addition to the inherent toxicity of a material.

Factors that can influence the health effects when human beings are exposed to hazardous materials include the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (CCR Title 22, Chapter 11, Article 2, Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific CCR Title 22 criteria. While hazardous substances are regulated by multiple agencies, as described in the Regulatory Setting subsection below, cleanup requirements for hazardous wastes are determined on a case-by-case basis according to the agency with lead jurisdiction over the project.

Most hazardous material regulation and enforcement in Siskiyou County is managed by the Siskiyou County Environmental Health Division, which refers large cases of hazardous materials contamination or violations to the North Coast Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC). When issues of hazardous materials arise, it is not at all uncommon for other agencies to become involved, such as the applicable air pollution control district and both the federal and state Occupational Safety and Health Administrations (OSHA).

EXISTING SITE CONDITIONS

Hazardous Material Records Review

Under Government Code Section 65962.5, both the DTSC and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search reveals a number of hazardous materials release sites in Yreka according to the DTSC (2016) EnviroStor and SWRCB (2016) GeoTracker databases. However, all but six of these sites were listed as cleanup complete, closed case on the databases. **Table 3.7-1** shows the six open cases and their distance from the nearest creek.

TABLE 3.7-1
HAZARDOUS MATERIAL RELEASE SITES IN YREKA

Name	EnviroStor or GeoTracker Site Location	Potential Contaminants of Concern	Current Status	Location within Reach?	Distance to Nearest Creek
Old Coal Gas Plant SV-SH-YRK-2	Burgess and E Lennox Streets[1]	Heating oil, fuel oil	Open inactive	Within FHR North Reach[1]	Adjacent (Yreka Creek)
Old Coal Gas Plant SV-SH-YRK-1	North and Main Streets	Heating oil, fuel oil	Open inactive	Adjacent to Miner-Lennox Reach	570 feet (Yreka Creek)
Pine Mountain Lumber Company	Burgess and E. Lennox Streets[2]	Pentachlorophenol (PCP)	Open Site Assessment	Within FHR North Reach[2]	2,140 feet (Yreka Creek)
American Fabric Care	490 S. Broadway Street	NA	Open inactive	Adjacent to State-Raymond Reach	270 feet (Yreka Creek)
Old County Yard	1455 S. Main Street	Lead	Open inactive	No	1,335 feet (Yreka Creek)
Hi-Ridge Lumber Company	229 Phillipe Lane	NA	Open – Remediation	No	>1.5 miles (Shasta Creek)

Source: SWRCB 2016; DTSC 2016; Google Earth
Notes:
1. The GeoTracker-identified location for this site appears to be in error on the GeoTracker website. The City has no record of an "Old Coal Gas Plant" at this site.
2. The GeoTracker-identified location appears to be in error, as the Pine Mountain Lumber Company was located south of Moonlit Oaks Avenue and west of State Route 3/S. Main Street.

HAZARDOUS MATERIALS TRANSPORT

The location of Interstate 5 (I-5) through Yreka raises concerns related to accidents with vehicles carrying hazardous materials. According to the Yreka General Plan, based on a survey done by the Local Emergency Planning Committee of the California Office of Emergency Services, every 2 minutes a truck carrying hazardous materials passes through the Mott Road and Cotton Weigh Stations located on I-5 (Yreka 2003, p. 6-8). Because I-5 is the main interstate highway connecting

California to Oregon and Washington, many of these trucks continue on through Yreka to northern destinations.

The transportation of hazardous materials in California is subject to various federal, state, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery or the loading of such materials (California Vehicle Code Sections 31602(b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is restricted to these routes except in cases where additional travel is required from the route to deliver or receive hazardous materials to and from users. The CHP (1997, pp. 2–10) has identified Interstate 5, located adjacent to the project site, as a route that may be used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is included in the Regulatory Setting subsection below.

OTHER HAZARDS

Airport Operations

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoffs and landings. Other airport operation hazards include incompatible land uses, power transmission lines, wildlife hazards (e.g., bird strikes), and tall structures that penetrate the imaginary surfaces surrounding an airport.

The closest public use airport to the project site is the Montague-Yreka Rohrer Field Airport, located more than 4 miles to the east of the city. The project site is not located within an Airport Land Use Capability Zone or Safety Zone.

Wildland Fire Hazards

In terms of fire protection, the entire city is considered a local responsibility area (LRA), including the proposed project site.[1] Fire protection services in Yreka are provided by the Yreka Volunteer Fire Department located at 401 W. Miner Street less than a quarter mile from Yreka Creek at its nearest point. While the majority of the proposed project area is located in an area designated as a non-fire severity zone, a small section of Yreka Creek, as it passes under I-5 near Moonlit Oak Avenue (within the Fairgrounds Reach), and areas of Greenhorn Creek above Greenhorn Reservoir (within the Greenhorn Falls and Upper Greenhorn reaches) are considered to be in a very high fire hazard severity zone (VHFHSZ), as shown on the California Department of Forestry and Fire Protection's (Cal Fire) (2009) VHFHSZ map for Siskiyou County.

City of Yreka Municipal Code Title 11, Section 11.10.040, Building Regulations Enforcement, enforces the provisions of the California Building Code (CBC) in all very high fire hazard severity zones. The CBC states that all new structures located in any fire hazard severity zone within the State Responsibility Area are required to be constructed in accordance with CBC Section

[1] Wildland fire protection in California is the responsibility of either the federal, state, or local government. Local responsibility areas include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, and counties, and by Cal Fire under contract to local government.

701A.3.2. This section establishes minimum standards for building materials and material assemblies as well as standards for a reasonable level of exterior wildfire exposure protection for buildings.

Public Safety

The Yreka Police Department provides police protection for all areas of the city, including those areas within the Greenway Master Plan. However, concerns over the potential increase of public safety hazards due to the increase in use of the Greenway Master Plan area without adequate policing or safety features have been raised.

3.7.2 REGULATORY SETTING

FEDERAL

Federal agencies that regulate hazardous substances include the US Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the US Department of Transportation (DOT), and the National Institute of Health. The following federal laws and guidelines govern hazardous materials:

- Federal Water Pollution Control Act
- Clean Air Act
- Occupational Safety and Health Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act
- Toxic Substances Control Act

Worker Safety

The Hazard Communication Standard (Title 29, Part 1910 of the Code of Federal Regulations [CFR]) requires that workers be informed of the hazards associated with the materials they handle. Workers must be trained in safe handling of hazardous materials, use of emergency response equipment, and the building emergency response plan and procedures. Containers must be appropriately labeled, and Material Safety Data Sheets must also be available in the workplace.

Hazardous Materials Transportation

The US Department of Transportation developed regulations pertaining to the transport of hazardous materials by all modes of transportation. DOT regulations specify packaging requirements for different types of materials. In addition to the DOT, the US Postal Service, the EPA, the CHP, the California Department of Transportation (Caltrans), and the DTSC implement and enforce state and federal laws regarding hazardous materials transportation. The US Postal Service has regulations for the transport of hazardous materials by mail.

Transporters of hazardous materials are subject to both DOT and EPA enforcement of the regulations. Consequently, the DOT and the EPA coordinate their efforts, especially at the regional level, to obtain compliance with both the RCRA and Hazardous Materials Transportation Act (HMTA) regulations. Under the authority of the Resource Conservation and Recovery Act, the EPA regulates the transportation of hazardous materials. The EPA coordinates its transportation ordinances with the requirements of the HMTA and any statutes promulgated by the US Department of Transportation pursuant to the HMTA. The EPA sets forth these standards applicable to transporters of hazardous materials in 40 CFR 263. The EPA standards incorporate and require compliance with the DOT provisions on labeling, marking, placarding, using proper containers, and reporting discharges. The EPA's adoption of these DOT standards ensures consistency among the requirements and avoids establishing conflicting rules. The DOT's regulations are documented in 49 CFR 171–180 and are implemented by the Research and Special Programs Administration within the DOT. In summary, the EPA is directed by the Resource Conservation and Recovery Act to establish certain standards for transporters of hazardous materials and to coordinate regulatory activities with the DOT.

EPA regulations require a transporter to:

- Comply with the manifest system (a system that ensures the integrity of the shipment from the point of origin to its destination).
- Maintain the appropriate records (signed manifests) for three years.
- Take immediate action to protect human health and the environment (e.g., notify local authorities or initiate interim measures) in the case of a discharge.
- Notify the National Response Center and submit a report to the DOT Office of Hazardous Materials Regulations in the event of a hazardous waste discharge.
- Clean up any discharges to the environment and take any actions required by the appropriate government officials for mitigating the discharge effects on human health and environment.

Transporters of hazardous materials must also adhere to all of the Federal Motor Carrier Safety Regulations that the DOT has adopted under the Motor Carrier Safety Act of 1984. This act specifies more requisites that apply to the transport vehicle and the driver. Among them are concise specifications for vehicle parts and accessories, such as lighting devices, brakes, glazing and windows, fuel systems, tires, and horns. Additional requirements concerning inspection, repair, and maintenance are enumerated. Special driving and parking rules that relate to hazardous materials transportation are also indicated. Standards for drivers identify minimum qualifications, including physical qualifications, background and character profiles, and pertinent examinations. Also included among these rules are testing requirements for alcohol and controlled substances such as marijuana, cocaine, opiates, amphetamines, and phencyclidine. Other regulations pertaining to drivers include standards for the driving of vehicles, stopping, fueling, the use of lamps, the reporting of accidents, and the monitoring of a driver's hours of service.

STATE

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) and the State Water Resources Control Board establish rules governing the use of hazardous materials. Applicable state laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Within CalEPA, the DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management and transport of hazardous materials under the authority of the Hazardous Waste Control Law.

Hazardous Materials Management

CalEPA has established regulations governing the use of hazardous materials in the state. Within CalEPA, the Department of Toxic Substances Control has primary hazardous materials regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with the DTSC, for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law. State regulations applicable to hazardous materials are contained primarily in Title 22 of the California Code of Regulations. CCR Title 26 is a compilation of those chapters or titles of the CCR that are applicable to hazardous materials management. California Division of Occupational Safety and Health (Cal/OSHA) standards are presented in CCR Title 8; these are more stringent than federal OSHA regulations and address workplace regulations involving the use, storage, and disposal of hazardous materials.

CalEPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six elements of the Unified Program are hazardous waste generation and on-site treatment, underground storage tanks, aboveground storage tanks, hazardous material release response plans and inventories, risk management and prevention programs, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency, referred to as the Certified Unified Program Agency (CUPA), which is responsible for consolidating the administration of the six program elements within its jurisdiction. The Siskiyou County Public Health Department-Environmental Health Division is the CUPA for Siskiyou County.

State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. California's Hazardous

Materials Release Response Plans and Inventory Law, also called the Business Plan Act, is intended to minimize the potential for accidents involving hazardous materials and facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on-site, to prepare an emergency response plan, and to train employees to use the materials safely.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. Cal/OSHA is responsible for developing and enforcing workplace safety standards and ensuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. As at the federal level, the Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. This is achieved through actions such as requiring manufacturers to appropriately label containers, make Material Safety Data Sheets available in the workplace, and require employers to properly train workers.

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. The code includes specifications for fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and premises.

LOCAL

Siskiyou County Environmental Health Division

Businesses and operations that sell and store hazardous materials are subject to the Hazardous Materials Release Response Plans & Inventories (Business Plans) program, which is regulated by the Siskiyou County Environmental Health Division (SCEHD) as part of the Certified Unified Program. The program requires the preparation of a document that provides an inventory of hazardous materials on-site, emergency plans and procedures in the event of an accidental release, and training for employees on safety procedures for handling hazardous materials and what to do in the event of a release or threatened release. These plans are routine documents that are intended to disclose the presence of hazardous materials and provide information on actions to be taken if materials are inadvertently released.

The purpose of the business plan program is to prevent damage to the health and safety of workers, the public, and the environment from the release or threatened release of hazardous materials. In addition, the business program is used to satisfy community right-to-know laws by providing hazardous material information to emergency responders and the community. Businesses located in cities and unincorporated areas of Siskiyou County are required to disclose all hazardous material and waste that are used, handled or stored at their facility above reporting

thresholds. In general, the reporting thresholds are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases.

Business plan information must be electronically submitted through the California Electronic Reporting System. Business plans must be annually certified or updated by March 1 of each year, or within 30 days of a substantial change. Annual facility inspections are conducted to verify the business plan information (SCEHD 2016).

City of Yreka General Plan

The Yreka General Plan (2003) Public Health and Safety Element includes programs intended to minimize risk to the public and the environment associated with hazardous materials and wildfires. For example, Program PH.6.C requires that all new projects or major additions to existing uses located on sites identified as having or containing likely hazardous substances or materials be reviewed by the Siskiyou County Health Department for compliance with applicable state and local regulations. Program PH.6.D does not allow the transport of hazardous substances and materials on local streets and highways without the approval of the applicable state agency having permit issuing authority for such material transportation. Programs that assist in the protection of people and structures in the event of a wildfire include Program PH.3.B, which requires all new development projects to design public facility improvements to ensure that water volume and hydrant spacing are adequate to support efficient and effective fire suppression.

Additionally, Program PH.2.A requires the City to develop flood control strategies and improvement plans for Yreka. Program PH.2.B requires that new development not be approved in areas which are subject to flooding without prior review and approval of plans for improvements which provide a minimum flood protection level equal to the 100-year storm event. Program PH.2.C states that the development of structures must be in compliance with Federal Emergency Management Agency (FEMA) standards. All 100-year flood hazards must be completely mitigated through proper design. Program PH.2.D requires that all new residential development projects be designed to avoid increases in peak storm runoff levels entering the natural drainages in Yreka. Finally, Program PH.2.E requires the City to provide adequate storm drainage improvements to prevent flooding in areas that are prone to flood hazards.

City of Yreka Municipal Code

Municipal Code Title 11, Section 11.10.040, Building Regulations Enforcement, enforces the provisions of the California Building Code in all very high fire hazard severity zones. The CBC states that all new structures located in any fire hazard severity zone within the state responsibility area are required to be constructed in accordance with CBC Section 701A.3.2. This section provides minimum standards for building materials and material assemblies and establishes standards for a reasonable level of exterior wildfire exposure protection for buildings.

3.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

CEQA Guidelines Appendix G states that a project may have a significant effect on the environment if the project would result in any of the following:

1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

2) 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.

3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment.

5) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, result in a safety hazard for people residing or working in the project area.

6) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

7) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

8) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands area adjacent to urbanized areas or where residences are intermixed with wildlands.

Additionally, the City raised concerns over public safety within the Greenway Master Plan area. CEQA requires identification of impacts to the physical environment due to a proposed project's implementation. While public safety is an impact area identified in CEQA, these impacts are based on something caused by or a result of the physical environment. In this case, however, the concern about public safety is over human interactions and activities. While this is not an impact to the physical environment, it is addressed in this EIR. However, conclusions as to whether the proposed project is a public safety issue cannot be qualified based on a level of significance, as with the other impact areas listed above, because there are no public safety thresholds regarding human interactions.

METHODOLOGY

The following impact analysis is based primarily on a review of existing applicable regulations, the Yreka Municipal Code and General Plan, and other relevant materials, as appropriate. In addition, this analysis was supplemented with an updated search of all federal, state, regional, and local government hazardous materials databases.

PROJECT IMPACTS AND MITIGATION MEASURES

Routine Transport, Use, or Disposal of Hazardous Materials (Standard of Significance 1)

Impact 3.7.1 Implementation of the proposed project would involve limited transport, use, storage, and disposal of hazardous materials during construction and operation. Compliance with existing regulations would reduce this impact to a level that is **less than significant**.

Greenway Master Plan

Project Construction

Construction of future projects as a part of the Greenway Master Plan would involve the use of various mechanical equipment and vehicles that contain materials classified as hazardous (e.g., oil, gasoline, diesel fuels, hydrologic fluid). Additionally, construction of any future buildings may also in the use of hazardous materials (solvents, adhesives and cements, certain paints, cleaning agents, and degreasers). All future construction would be required to comply with applicable building, health, fire, and safety codes. Hazardous materials may be used in varying amounts during construction of future projects within the Greenway Master Plan.

CCR Title 8 addresses workplace regulations involving the use, storage, and disposal of hazardous materials, and specific applications for construction workers. CCR Titles 22 and 26 set forth environmental health standards for hazardous materials management. California Health and Safety Code Chapter 6.95 sets forth enabling legislation for the application of CCR Titles 8, 22, and 26. Safety precautions for the prevention of fire hazards associated with the use and storage of hazardous materials are addressed in the Uniform Fire Code. Compliance with applicable federal, state, and local regulations, including but not limited to CCR Titles 8 and 22, the Uniform Fire Code, and California Health and Safety Code Chapter 6.95, would ensure that the project would not create a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials.

Project Operation

Maintenance activities may use hazardous materials such as fuels, oils and lubricants, paints and paint thinners, and possibly pesticides and herbicides. None of these activities would be expected to transport, use, store, or dispose of substantial amounts of hazardous materials, but it is common for small amounts of materials that may be considered hazardous to be used daily in these types of uses, including, for example, the use of paints/thinners, gasoline in maintenance vehicles, and pesticides/herbicides for maintaining Greenway facilities.

Those hazardous materials/chemicals that would be used for maintenance of the park facilities would be limited in number and be stored off-site at the City's Public Works storage facilities. Operations that store hazardous materials are subject to the Hazardous Materials Release Response Plans & Inventories program, which is regulated by the SCEHD as part of the Certified Unified Program. The program requires the preparation of a document that includes an inventory of hazardous materials on-site, emergency plans and procedures in the event of an accidental release, and training for employees on safety procedures for handling hazardous materials and what to do in the event of a release or threatened release. These plans are routine documents

that are intended to disclose the presence of hazardous materials and provide information on actions to be taken if materials are inadvertently released. Businesses and operations located in cities and unincorporated areas of Siskiyou County are required to disclose all hazardous material and waste that are used, handled, or stored at their facility above reporting thresholds. In general, the reporting thresholds are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases.

Conclusion

Hazardous materials regulations, which are codified in CCR Titles 8, 22, and 26, and their enabling legislation set forth in California Health and Safety Code Chapter 6.95, were established at the state level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the State (e.g., Cal/OSHA in the workplace or the DTSC for hazardous waste) and/or local jurisdictions.

The use, storage, and transportation of hazardous materials are subject to local, state, and federal regulations, the intent of which is to minimize the public's risk of exposure. Based on the uses that would be part of the project and the existing regulatory structure related to these materials, the Master Plan would not cause a threat to public safety during project construction or operation. Therefore, because the transport, use, storage, and disposal of hazardous materials pertaining to the Master Plan would be subject to extensive regulatory oversight, this impact is considered to be **less than significant**.

Flood Hazard Reduction Project

Project Construction

Construction of the FHR Project would involve the use of various mechanical equipment and vehicles that contain materials classified as hazardous (e.g., oil, gasoline, diesel fuels, hydrologic fluid). Additionally, removal and reconstruction of the existing buildings may also involve the use of hazardous materials (solvents, adhesives and cements, certain paints, cleaning agents, and degreasers). FHR Project construction would be required to comply with applicable building, health, fire, and safety codes. Hazardous materials would be used in varying amounts during construction of the project.

CCR Title 8 addresses workplace regulations involving the use, storage, and disposal of hazardous materials, and specific applications for construction workers. CCR Titles 22 and 26 set forth environmental health standards for hazardous materials management. California Health and Safety Code Chapter 6.95 sets forth enabling legislation for the application of CCR Titles 8, 22, and 26. Safety precautions for the prevention of fire hazards associated with the use and storage of hazardous materials are addressed in the Uniform Fire Code. Compliance with applicable federal, state, and local regulations, including but not limited to CCR Titles 8 and 22, the Uniform Fire Code, and California Health and Safety Code Chapter 6.95, would ensure that the FHR Project would not create a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials.

Project Operation

Maintenance activities would use hazardous materials such as fuels, oils and lubricants, paints and paint thinners, and possibly pesticides and herbicides. None of these activities would be expected to transport, use, store, or dispose of substantial amounts of hazardous materials, and in all instances this EIR assumes that the application and use of the materials is conducted in accordance with state and federal law. It is common for small amounts of materials that may be considered hazardous to be used daily in these types of uses, including, for example, the use of pesticides/herbicides for controlling invasive weeds and other plants. While the use of hazardous chemicals may be required for maintenance of the FHR Project, the storage of such chemicals would not be within any of the three reaches but at a storage facility already approved for such use. The FHR Project would not require a new or expanded storage facility.

Those hazardous materials/chemicals that would be used for maintenance of the FHR Project within the Central, North, and South Reaches would be limited in number and be stored off-site at the City's Public Works storage facilities. Operations that store hazardous materials are subject to the Hazardous Materials Release Response Plans & Inventories program, which is regulated by the SCEHD as part of the Certified Unified Program. The program requires the preparation of a document that provides an inventory of hazardous materials on-site, emergency plans and procedures in the event of an accidental release, and training for employees on safety procedures for handling hazardous materials and what to do in the event of a release or threatened release. These plans are routine documents that are intended to disclose the presence of hazardous materials and provide information on actions to be taken if materials are inadvertently released. Businesses and operations located in cities and unincorporated areas of Siskiyou County are required to disclose all hazardous material and waste that are used, handled or stored at their facility above reporting thresholds. In general, the reporting thresholds are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases.

Conclusion

Hazardous materials regulations, which are codified in CCR Titles 8, 22, and 26, and their enabling legislation set forth in California Health and Safety Code Chapter 6.95, were established at the state level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the State (e.g., Cal/OSHA in the workplace or the DTSC for hazardous waste) and/or local jurisdictions.

The use, storage, and transportation of hazardous materials are subject to local, state, and federal regulations, the intent of which is to minimize the public's risk of exposure. Based on the uses that would be part of the project and the existing regulatory structure related to these materials, the Flood Hazard Reduction Project would not cause a threat to public safety during project construction or operation. Therefore, because the transport, use, storage, and disposal of hazardous materials pertaining to the project would be subject to extensive regulatory oversight, this impact is considered to be **less than significant**.

Mitigation Measures

None required.

Exposure to Hazardous Materials (Standard of Significance 2)

Impact 3.7.2 Implementation of the proposed project would not result in the accidental release of hazardous materials into the environment. Therefore, impacts are considered **less than significant**.

Greenway Master Plan

One of the means through which human exposure to hazardous substance could occur is accidental release. Incidents that result in an accidental release of hazardous substance into the environment can cause contamination of soil, surface water, and groundwater, in addition to any toxic fumes that might be generated. If not cleaned up immediately and completely, the hazardous substances can migrate into the soil or enter a local stream or channel, causing contamination of soil and water. Human exposure of contaminated soil or water can have potential health effects on a variety of factors, including the nature of the contaminant and the degree of exposure.

Future projects related to the Greenway Master Plan would result in soil disturbances. This potential development may result in uses that have the potential for a release of a hazardous material. As described under Impact 3.7.1, future construction of projects within the Greenway Master Plan may involve the transport, use, storage, and disposal of typical hazardous materials. However, all handling of hazardous materials would be required to comply with applicable local, state, and federal regulations related to hazardous materials. The type of projects within the Greenway Master Plan would not normally use hazardous materials of any substantial amount during operation. If at such time a project within the Greenway Master Plan would be required to use or store hazardous materials beyond the hazardous materials thresholds established by the SCEHD, the particular project would be required to comply with the regulations in the Hazardous Materials Release Response Plans & Inventories program. Compliance with local, state, and federal regulations would ensure that risks resulting from the accidental release of hazardous materials or hazardous wastes would be **less than significant**.

Flood Hazard Reduction Project

Grading of land or construction involving the disturbance of land has the potential to expose persons to hazardous materials from a hazardous materials release site if not mitigated properly. As discussed under Impact 3.7.4, none of the active hazardous materials release sites are located in the Central, North, or South reaches. All other hazardous materials release sites in the city have been cleaned and are no longer considered hazardous. As such, the Central, North, and South reaches are considered to have a low potential for exposure to existing hazardous materials release due to soil disturbance.

The demolition or moving of buildings may involve exposure to lead-based paint or asbestos, depending on the age of the building. One building is proposed to be relocated within the Central Reach and one building is to be demolished. These buildings are the property of the Klamath National Forest and are used for storage purposes. All demolition and relocation would be required to comply with existing regulations regarding the potential for exposure to asbestos and lead paint as a part of the National Forest demolition/construction process. Therefore, the potential for exposure to hazardous materials would result in a **less than significant** impact.

Mitigation Measures

None required.

Hazardous Emissions or Substances near a School Site (Standard of Significance 3)

Impact 3.7.3 The proposed project site is located within one-quarter mile of an existing or proposed school site. There is a **less than significant** impact.

Greenway Master Plan

Some future projects within the Greenway Master Plan would be constructed on or near schools in the city. However, none of these projects would not result in the release of hazardous emissions or substances as discussed under Impact 3.7.1. Therefore, the project would have a **less than significant** impact regarding hazardous emissions near a school.

Flood Hazard Reduction Project

Both Jackson Street Elementary and Evergreen Elementary are approximately a third of a mile from the Central Reach. Yreka Union High School is located approximately a quarter of a mile from the North Reach; however, the FHR Project would not result in the release of hazardous emissions or substances, as discussed under Impact 3.7.1. Therefore, the project would have a **less than significant** impact regarding hazardous emissions near a school.

Mitigation Measures

None required.

Located on a List of Hazardous Materials Site (Standard of Significance 4)

Impact 3.7.4 The proposed project site has not been listed as a hazardous material release site. The project would have **no impact** in this area.

Greenway Master Plan

A search reveals a number of hazardous materials release sites within a half mile of the Greenway Master Plan area, according to the DTSC (2016) EnviroStor and SWRCB (2016) GeoTracker databases. However, all but six of these sites were listed as cleanup complete, closed case on the databases. Two of the sites are identified as being located within the North Reach, which is discussed further under the Flood Hazard Reduction Project subheading directly below. None of the other sites are located in the Master Plan area. As such, the Greenway Master Plan would have **no impact** with regard to being located within a site that is included on a list of hazardous materials sites.

Flood Hazard Reduction Project

Of the open hazardous materials release sites located in the city, those identified as being located within the North Reach area are listed in **Table 3.7-2**.

TABLE 3.7-2
HAZARDOUS MATERIAL RELEASE SITES WITHIN THE BOUNDARIES OF THE FHR PROJECT

Name	EnviroStor or GeoTracker Site Location	Potential Contaminants of Concern	Current Status	Location within Reach	Distance to Nearest Creek
Old Coal Gas Plant SV-SH-YRK-2	Burgess and E Lennox Streets[1]	Heating oil, fuel oil	Open inactive	Within North Reach[1]	Possibly adjacent (Yreka Creek)
Pine Mountain Lumber Company	Burgess and E Lennox Streets[2]	Pentachlorophenol (PCP)	Open Site Assessment	Within North Reach[2]	2,140 feet (Yreka Creek)

Source: SWRCB 2015; Google Earth
Notes:
1. The GeoTracker-identified location for this site appears to be in error on the GeoTracker website. The City has no record of an "Old Coal Gas Plant" at this site.
2. The GeoTracker-identified location appears to be in error, as the Pine Mountain Lumber Company was located south of Moonlit Oaks Avenue and west of State Route 3/S. Main Street.

As shown on the GeoTracker website, the Old Coal Gas Plant and the Pine Mountain Lumber Company sites are located within the North Reach. However, further investigation identifies the GeoTracker location for these sites as erroneous, as the site locations identified by the GeoTracker database are currently occupied by single-family homes. These homes have been at their location for many years, much longer than the cleanup initiation date of November 1992 (Old Coal Gas Plant) and July 1990 (Pine Mountain Lumber Company). Also, the City has no record of a coal gas plant existing at this location or any other type of business that would use this type of facility. As further indication of an error in location, GeoTracker indicates that the Pine Mountain Lumber Company cleanup site is adjacent to the Old Coal Gas Plant site. Actually, the Pine Mountain Lumber Company was located south of Moonlit Oaks Avenue and west of State Route 3/South Main Street, approximately 2.4 miles south of the indicated GeoTracker site. Additionally, the SWRCB enforcement orders indicate that the Pine Mountain Lumber Company was located "adjacent to Highway 3 on the south edge of Yreka…" (SWRCB 1990). No site history is available for the Old Coal Gas Plant site according to the GeoTracker database.

No hazardous materials release sites have been identified to be located in the Central or South reaches, and those sites identified as being within the North Reach are mis-located. As such, the FHR Project would have **no impact** with regard to being located within a site that is included on a list of hazardous materials sites.

Mitigation Measures

None required.

Located within an Airport Safety Zone

Impact 3.7.5 The project site is not located in the vicinity of an airport safety zone. The project would have **no impact**.

Greenway Master Plan

The Greenway Master Plan is more than 2 miles from a public or private airport. The closest public airport to Yreka is the Siskiyou County Airport (Montague-Yreka Rohrer Field), located in the City

of Montague, more than 4 miles to the east of Yreka. Development of the Greenway Master Plan would not result in a safety hazard for people residing or working in the project area. The Greenway Master Plan would have **no impact**.

Flood Hazard Reduction Project

The project site is more than 2 miles from a public or private airport. The closest public airport to Yreka is the Siskiyou County Airport (Montague-Yreka Rohrer Field), located in the City of Montague, more than 4 miles to the east. Development of the Central, North, and South reaches would not result in a safety hazard for people residing or working in the project area. The project would have **no impact**.

Mitigation Measures

None required.

Located in the Vicinity of a Private Airstrip (Standard of Significance 6)

Impact 3.7.6 There are no private airports in the vicinity of the proposed project site. There would be **no impact**.

Greenway Master Plan

There are no private airstrips within 2 miles of the Greenway Master Plan area. The Greenway Master Plan would have **no impact**.

Flood Hazard Reduction Project

There are no private airstrips within 2 miles of the FHR Project area. The Flood Hazard Reduction Project would have **no impact**.

Mitigation Measures

None required.

Interfere with Emergency Response or Evacuation (Standard of Significance 7)

Impact 3.7.7 The proposed project would not substantially impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. This impact would be **less than significant**.

Yreka is located in the operational area of the Siskiyou County Office of Emergency Services. A standardized emergency management system (SEMS) program is in place between the City and the Office of Emergency Services. The local emergency plan guides local response to emergencies and local emergency management and is conducted under the direction of the City of Yreka Police Department.

Greenway Master Plan

While the Greenway Master Plan covers a large area, the majority of future improvements would occur adjacent to the various creeks identified in the Master Plan. However, during the construction of the improvements, some streets may become temporality encumbered due to construction activities. It is unknown at this time whether any future activities would require street closures. However, if street closures would occur through actions by a private party, these closures would have to be approved by the City prior to the occurrence through the application of an encroachment permit as identified in Yreka Municipal Code Section 11.01.06. Those street closures instigated by the City would be subject to internal review prior to the closure. Knowledge of anticipated street closures would allow the City to revise emergency response or excavation routes as necessary. Additionally, construction-related street closures would be short term, and development of the improvements identified in the Master Plan would not result any permanent evacuation route street closures. Therefore, impacts would be **less than significant**.

Flood Hazard Reduction Project

Construction activities for the FHR Project will occur in the immediate area of the Yreka Creek corridor and will not affect city streets or evacuation routes. While some construction staging areas may be located along city streets, these staging areas will not be located in the streets or interfere with emergency response or evacuation. Therefore, impacts would be **less than significant**.

Mitigation Measures

None required.

Wildland Fire Hazards (Standard of Significance 8)

Impact 3.7.8 Portions of the proposed project site are designated by the California Department of Forestry and Fire Protection (Cal Fire) as being within a fire hazard severity zone. This impact would be **less than significant**.

Greenway Master Plan

While the majority of the Greenway Master Plan area is located in an area designated as a non-fire severity zone, a small section of Yreka Creek, as it passes under I-5 near Moonlit Oak Avenue (within the Fairgrounds Reach), and areas of Greenhorn Creek above Greenhorn Reservoir (within the Greenhorn Falls and Upper Greenhorn reaches) are considered to be in a very high fire hazard severity zone (VHFHSZ), as shown on the Cal Fire (2009) VHFHSZ map for Siskiyou County.

Full implementation of the improvements in the Master Plan would result in the moving of 22 homes or main buildings and 41 outbuildings out of the floodplain, as shown in **Table 2.0-1**. However, none of these buildings are located in an area identified as a high fire severity zone. Additionally, the Master Plan identifies that compatible facilities within the Master Plan could include horseback riding staging areas, an amphitheater, and an RV park in Upper Greenhorn Park. Cal Fire identifies the park as being within a very high fire severity zone.

While the proposed Master Plan does not identify any proposed new buildings, there are references to a potential need for two new restroom facilities. City of Yreka Municipal Code Title 11, Section 11.10.040, Building Regulations Enforcement, enforces the provisions of the California

Building Code (CBC) in all very high fire hazard severity zones. The CBC states that all new structures located in any fire hazard severity zone within the state responsibility area are required to be constructed in accordance with CBC Section 701A.3.2. This section establishes minimum standards for building materials and material assemblies as well as standards for a reasonable level of exterior wildfire exposure protection for buildings.

Compliance with the CBC would provide for a reasonable level of exterior wildfire exposure protection for buildings. Additionally, the location of the Master Plan area makes it readily accessible by emergency personnel and vehicles in the event of a wildland fire. Any new proposed uses within the Master Plan would be required to be reviewed by the Yreka Volunteer Fire Department and comply with all requirements for fire protection instituted by the department. As such, this impact would be **less than significant**.

Flood Hazard Reduction Project

As discussed previously, none of the three projects in the Flood Hazard Reduction Project are located in an area designated by Cal Fire (2009) as a fire hazard severity zone. Furthermore, no very high fire hazard severity zones are located nearby. Finally, the location of all of the FHR Project sites makes them readily accessible by emergency personnel and vehicles in the event of a wildland fire. For these reasons, this impact would be **less than significant**.

Mitigation Measures

None required.

Public Safety

Impact 3.7.9 Implementation of the improvements identified in the Greenway Master Plan and the FHR Project are anticipated to result in a greater number of park users in the future. This may increase the potential for human conflicts and crime if not properly negated.

According to the National Recreation and Park Association (NRPA), people seek out parks because they provide contact with the natural environment and a social environment which offers opportunities for meeting with friends, watching others, and being seen—all of which help to establish a feeling of comfort and security.

Well-designed and well-used parks and recreation areas are a great asset for local communities. But that asset can quickly become a liability when parks become unsafe and as a result, lose their value and benefit to the community. Keeping park and recreation facilities safe is a key to community wellness and has a direct relationship to their usage rate (NRPA, n.d.).

Addressing the issue of safety in parks and open space is a complex task. The problem cannot be solved by design alone or by any one single action. What is required to create and maintain safer park spaces is an integrative strategy involving design, programming, maintenance, and citizen involvement. The key finding in park safety research shows that there is a connection between park and recreation use and safety: where people use parks in a positive way and in substantial numbers, all people feel more secure. Problematic features of physical design of parks that influence crime include:

- Narrow pedestrian paths located between dense planting;
- Dense shrubs that block the view of the park from adjacent houses;
- Secluded and unmonitored pedestrian routes that encourage misuse;
- Inadequate lighting on pedestrian routes;
- Signs of physical disorder such as graffiti and garbage; and
- Lack of formal surveillance of areas surrounding parks.

The design of a park or recreation area can have a direct impact on people's perceptions of safety and their willingness to use a space. Designing a park for safety is based on what is generally considered to be good design: it meets the needs of its users, it is diverse and interesting, it connects people with place, and it provides people with a positive image and experience. Designers, operations, recreation staff, and citizens all have a vital role to play in creating safer park environments. Per the NRPA, the key factors to consider when dealing with park safety issues are summarized below.

- Perceptions that a park is unsafe are as important as actual safety.
- Involve users in the design or redesign of park spaces.
- Clear and understandable signage helps enhance the feeling of safety because it allows people to orient themselves.
- Formal/informal surveillance or the extent to which activities in parks can be observed by other people is important for reducing vandalism, inappropriate activities, and feelings of isolation.
- Lighting to enhance perceptions of safety, although this may not reduce actual crime rates. Improved lighting and increased legitimate activity allow for greater night time surveillance.
- Clear sightlines which give the perception of actual safety because people can see what is ahead and around them and if other people are visible.
- Physical access should be maximized by providing users with a choice of legible routes to and from park areas.
- Good maintenance is crucial to maintain perceptions that areas are low risk. Vandalism can contribute to perceptions of fear because litter, graffiti, and broken furniture all suggest a place is uncared for and possibly unsafe.
- Diversity can attract a higher intensity of use. Variety in the form, color, and texture of landscape elements as well as a range of activities contributes to an interesting environment that attracts users.
- Signage in the form of maps and descriptive text promotes a greater sense of safety because people feel safer when they know where they are and how to get to where they want to go.

One of the main goals of the Greenway Master Plan is to make the Master Plan area more desirable and safe for park users. The Master Plan includes many factors designed to achieve this goal, such as:

- Well-marked trails with signage showing links and distance.
- Trails designed to enhance safety such as 8-, 6-, and 4-foot widths which would provide sight lines to see ahead and behind clearly.
- Interconnecting trails proving links to business and residential areas, places of work, schools, and parks and other public areas.
- Trails designed to accommodate police patrols and emergency vehicle access.
- Trailheads every half mile.
- Bicycle racks.
- Lighting and security cameras at all trail tunnels used for road crossings.
- Patrolling by Yreka Police in police cars, on motorcycles or quadcycles, and/or on bicycle.
- Surveillance cameras at key locations, such as at bridges.
- Greenway-specific ordinances regarding no camping, no fires, no littering, dogs on leash, etc.
- Ongoing park maintenance to maintain vegetation and facilities within the Master Plan area.

As previously stated, while public safety is an impact area identified in CEQA, these impacts are based on something caused by or a result of the physical environment. In this case, however, the concern about public safety is over human interactions and activities. While this is not an impact to the physical environment, conclusions as to whether the proposed project is a public safety issue cannot be qualified based on a level of significance, as with the other impact area addressed above, because there are no public safety thresholds regarding human interactions.

As discussed above, park design can assist in making a park safer. However, public participation and City security efforts such as police patrols, adequate lighting, and security cameras are what is ultimately needed to provide the proper level of safety for park visitors. Research by the Citizens' Taskforce on the Use and Security of Central Park found that there was a direct relationship between the level of park use and the perception of security: specifically, the larger the number of visitors involved in positive activities, the more likely that antisocial behavior was deterred (NRPA, n.d.). The taskforce linked recreational programs with improved security by suggesting that an emphasis on expanded recreation initiatives will encourage greater use and ultimately create a safer park environment. As such, while the Greenway Master Plan can and does provide measures for a safer, more desirable park facility along the Yreka Creek watershed area, the ultimate component for park safety is the city and the city residents themselves.

3.7.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

Hazardous material, human health, and safety impacts as described in CEQA Appendix G are generally site-specific and not cumulative by nature, as impacts generally vary by land use, site characteristics, and site history. The cumulative setting would include those future projects of the Greenway Master Plan and would be limited to the Master Plan area itself.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Hazardous Materials and Emergency Response Impacts

Impact 3.7.10 Implementation of the proposed project, in combination with other existing, proposed, and reasonably foreseeable future development in the city, may cumulatively increase exposure of people, property, and the environment to hazardous materials and interference with emergency response. However, this impact would be **less than cumulatively considerable.**

Greenway Master Plan

Implementation of the Master Plan would result in potential short-term impacts during construction activities associated with exposure to hazards such as potential contaminated soils. However, hazards and hazardous materials impacts associated with future projects within the Master Plan would be site-specific and would not contribute to cumulative hazardous impacts. Cumulative development in the region is not anticipated to result in significant hazards or hazardous materials impacts to the project area.

As described in this section, with compliance with hazardous materials regulations, future projects would not contribute to an increase in the potential for exposure to hazards associated with soil contamination or the potential risk of upset as a result of current or past land uses. The Greenway Master Plan would not combine with any planned growth in the area to form a hazards impact greater or more significant than the impact of Master Plan future projects alone. Therefore, the cumulative hazards impacts are considered **less than cumulatively considerable**.

Flood Hazard Reduction Project

There are no identified hazardous material sites within the FHR Project reaches. The FHR Project would not result in the use of hazardous materials other than occasional use of pesticides/herbicides for weed control as a part of routine parkland maintenance. The use of these chemicals is strictly regulated and would not result in an increase in exposure to people.

The proposed project would not increase the exposure of persons or structures to wildland fires beyond current conditions. The FHR Project would not combine with any planned growth in the area to form a hazards impact greater or more significant than the impact of the FHR Project alone. Therefore, the cumulative hazards impacts are considered **less than cumulatively considerable**.

Mitigation Measures

None required.

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3.8 HYDROLOGY AND WATER QUALITY

This section addresses the potential environmental impacts of the proposed project related to hydrology and water quality. The existing surface water and groundwater hydrologic conditions on the project site and in the surrounding area are characterized, and relevant law and regulations as they apply to the proposed project are summarized. The impact analysis focuses on potential degradation of water quality, alteration of existing drainage patterns, and flooding hazards. Information used in the preparation of this section was obtained primarily from the State Water Resources Control Board (SWRCB), the Federal Emergency Management Agency (FEMA), the Yreka Creek Hydrology Final Report (Hydmet Consulting 2015), the geomorphic analysis prepared for the project (GeoServ 2016a), and the proposed improvements for the project site.

3.8.1 ENVIRONMENTAL SETTING

SURFACE WATER RESOURCES

Klamath River Basin

Yreka Creek and its tributaries are part of the Klamath River Basin Hydrologic Unit. The Klamath River Basin covers 10.5 million acres in southern Oregon and northern California. The Klamath River, which starts in Oregon, travels for approximately 250 miles through California before flowing into the Pacific Ocean near Crescent City. The river is impounded by four dams—one for water delivery and three for hydroelectric generation, part of PacifiCorp's Klamath Hydroelectric Project. In California, the Klamath River Basin is located in Siskiyou, Modoc, Trinity, Humboldt, and Del Norte counties. Major tributaries to the Klamath include the Shasta, Scott, Salmon, and Trinity rivers (EPA 2015). See **Figure 3.8-1**.

The Klamath Basin has been in the forefront of national attention due to contentious resource issues including water allocation, water quality, and threatened and endangered species. The Klamath River has been the third-largest producer of salmon on the West Coast, following closely behind the Sacramento and Columbia rivers. In 2002, a massive die-off of over 33,000 adult salmon on the Klamath River brought renewed attention to this area (EPA 2015). Several water bodies in the Klamath Basin—the Lost River, the Klamath Straits Drain, and the Klamath River from Link River to the Pacific Ocean—are considered to be impaired waters because of too much pollution.[1] In 2013, the State Water Resources Control Board (SWRCB) (2013) issued a news release stating that due to potential health risks from blue-green algae, reaches of the Klamath River including the Copco and Iron Gate reservoirs, and below to the confluence with Tully Creek were posted with health advisories warning against human and animal contact with the water. In July 2014, the SWRCB issued a news release stating that the Copco and Iron Gate reservoirs and the Klamath River below Iron Gate Dam down to Weitchpec on the Yurok Reservation were posted with health advisories for blue-green algae warning against human and animal contact with the water.

The algal blooms appear as bright green in the water, and blue-green, white, or brown foam, scum, or mats can float on the water and accumulate along the shore. Recreational exposure to toxic blue-green algae can cause eye irritation, allergic skin rash, mouth ulcer, vomiting, diarrhea, and cold and flu-like symptoms. Liver failure, nerve damage, and death have occurred in rare situations where large amounts of contaminated water were directly ingested (SWRCB 2014).

[1] Water quality is impaired when a pollutant or pollutants enter a water body and limit its use for drinking, fishing, swimming, or some other purpose (NRCS 1996).

Shasta River Watershed

The Shasta River watershed is an important cold-water tributary to the Klamath River Basin. The watershed encompasses over 790 square miles and includes over 120 miles of streams (SVRCD 2012). The Shasta River originates from snowmelt in the Scott Mountains on the western side of the basin, while receiving substantial spring flows from Mount Shasta on the eastern side. The Shasta River flows north, then northwest, approximately 50 miles before entering the Klamath River. The Shasta River is impounded by Dwinnell Dam at river mile 40.6. Primary tributaries are Parks Creek, Big Springs Creek, Willow Creek, Little Shasta River, and Yreka Creek. Accretion from tributaries and springs, combined with agricultural diversion and return flows, contribute to a complex annual flow regime seasonally and longitudinally (DWR 2013).

In 2005, the Southern Oregon and Northern California coho salmon was listed as threatened by the State of California. In 2007, the US Environmental Protection Agency (EPA) formally adopted a Total Maximum Daily Load (TMDL) for the Shasta River, which lists the river as being impaired for elevated temperature and low dissolved oxygen levels. A majority of the Shasta River watershed is in private ownership with some federal landholdings mostly in the headwaters. Private lands adjacent to the Shasta River consist of small cow-calf and hay operations, which predominantly depend on numerous surface water diversions from the Shasta River and tributary streams and springs to flood irrigate pastures. Agricultural runoff or "tailwater" is identified in the Shasta River TMDL as being a major contributor to the poor water quality conditions in the river (SVRCD 2012).

Yreka Creek Subwatershed

Yreka is within the Yreka Creek subwatershed that drains to the Shasta River. The subwatershed has a drainage area of 33,453 acres and about 105 miles of active stream channel. The Yreka Creek subwatershed was subdivided into 7 drainages and 66 subdrainages (GeoServ 2016b, p. 10). The main channels of Yreka Creek and tributaries were also named for planning purposes. Seven watersheds drain to the creek: Upper Yreka Creek, Middle Yreka Creek, Lower Yreka Creek, Greenhorn Creek, Upper Humbug Creek, Lower Humbug Creek, and Juniper Creek (see **Figure 3.8-2**).

GROUNDWATER RESOURCES

The project site is located in the Shasta Valley Groundwater Basin, which is part of the North Coast Hydrologic Region. The groundwater basin has a surface area of 56,640 acres (DWR 2004, p. 1). The Shasta Valley Groundwater Basin is located along the west side of Shasta Valley and consists of Quaternary terrace deposits and alluvium. In the vicinity of Montague, the basin trends to the northeast and largely consists of older alluvium. The basin is bounded on the west by Paleozoic metamorphic and sedimentary rocks and Mesozoic intrusive rocks of the Klamath Mountains. On the east, from the southern extents of the basin north to Montague, the basin is bounded by a debris avalanche from ancestral Mount Shasta (DWR 2004). Little Shasta Valley is bounded by the debris avalanche and Holocene Plutos Cave basalt to the south, and Eocene to Miocene volcanic rocks of the western Cascades to the east and north, which also separates Little Shasta Valley from the Shasta Valley Basin located north of Montague. Annual precipitation in the basin is estimated to be 13 to 25 inches, increasing to the south (DWR 2004).

The basin boundary has been delineated by the contact of the alluvial fill with the surrounding hard rock. Although some wells produce water from the alluvium, many wells also produce water from underlying volcanic rock. All units in the valley are hydrologically interconnected. The volcanic units provide storage and recharge to the basin and also serve as recharge and storage

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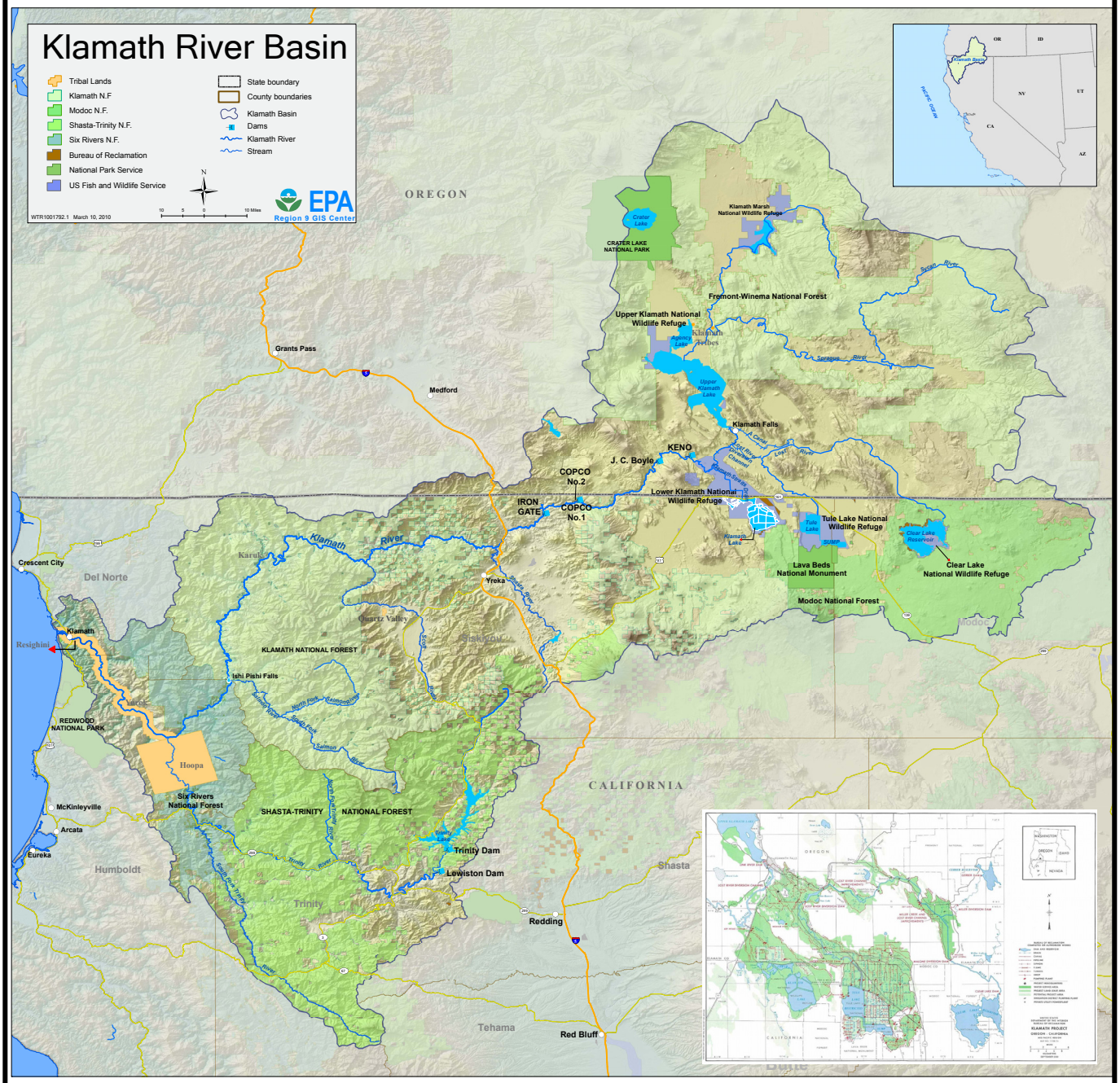

Source: EPA Region 9 GIS Center

FIGURE 3.8-1

Klamath River Basin

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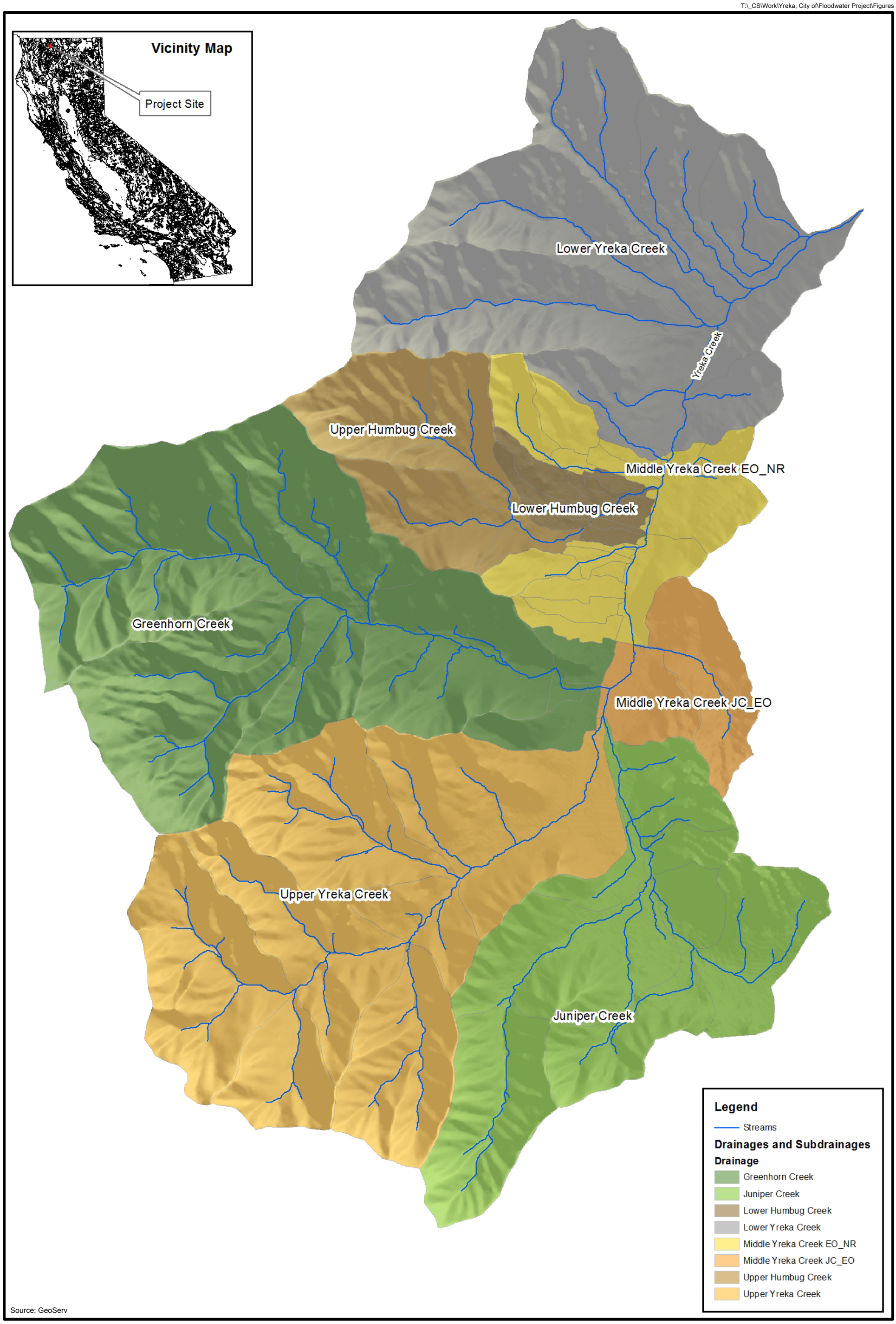

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FIGURE 3.8-2
Yreka Creek Watershed

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INTERNATIONAL

to areas outside of the basin. According to the California Department of Water Resources (DWR) (2004), due to the complexity of the region with respect to the extensive network of volcanic recharge/storage areas, the amount of groundwater in storage has not been estimated.

The DWR established the California Statewide Groundwater Elevation Monitoring (CASGEM) program as a permanent, locally managed program of regular and systematic monitoring in all of California's alluvial groundwater basins. Information on the groundwater levels in the Shasta Valley Groundwater Basin is very limited due to the limited number of wells. Only three wells, which are part of the CASGEM program, provide data in the groundwater basin; two of these wells have only been monitored since 2013. However, these two wells (SV-02 and SV-03) indicate a 1- to 3-foot decrease in groundwater levels since 2013. The third well (SV-01), which has been monitored consistently since 1990, shows a decrease in groundwater levels from approximately 8 feet below ground surface in 1990 to 42 feet below ground surface in 2015 (DWR 2015).

WATER QUALITY

Listing a water body as impaired in California is governed by the Water Quality Control Policy for developing California's Clean Water Act Section 303(d) Listing Policy. The SWRCB and the Regional Water Quality Control Boards assess water quality data for California's waters every two years to determine if they contain pollutants at levels that exceed protective water quality criteria and standards. This biennial assessment is required under Section 303(d) of the federal Clean Water Act. 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 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 or impaired body of water. The TMDL process 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 waterbody 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 (North Coast RWQCB 2015).

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. 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 (North Coast RWQCB 2015).

Klamath River Hydrologic Unit

The Klamath River Hydrologic Unit (HA), which includes the Shasta River and its tributaries, from source to mouth, is listed as water quality impaired (by both Oregon and California) under Section 303(d) of the federal Clean Water Act. In 1992, the State Water Resources Control Board proposed that the Klamath River be listed for both temperature and nutrients, requiring the development of TMDL limits and implementation plans. The US Environmental Protection Agency (EPA) and the North Coast RWQCB accepted this action in 1993. The basis for listing the Klamath River as

impaired was aquatic habitat degradation due to excessively warm water temperatures and algae blooms associated with high nutrient loads, water impoundments, and agricultural water diversions (SWRCB 2006).

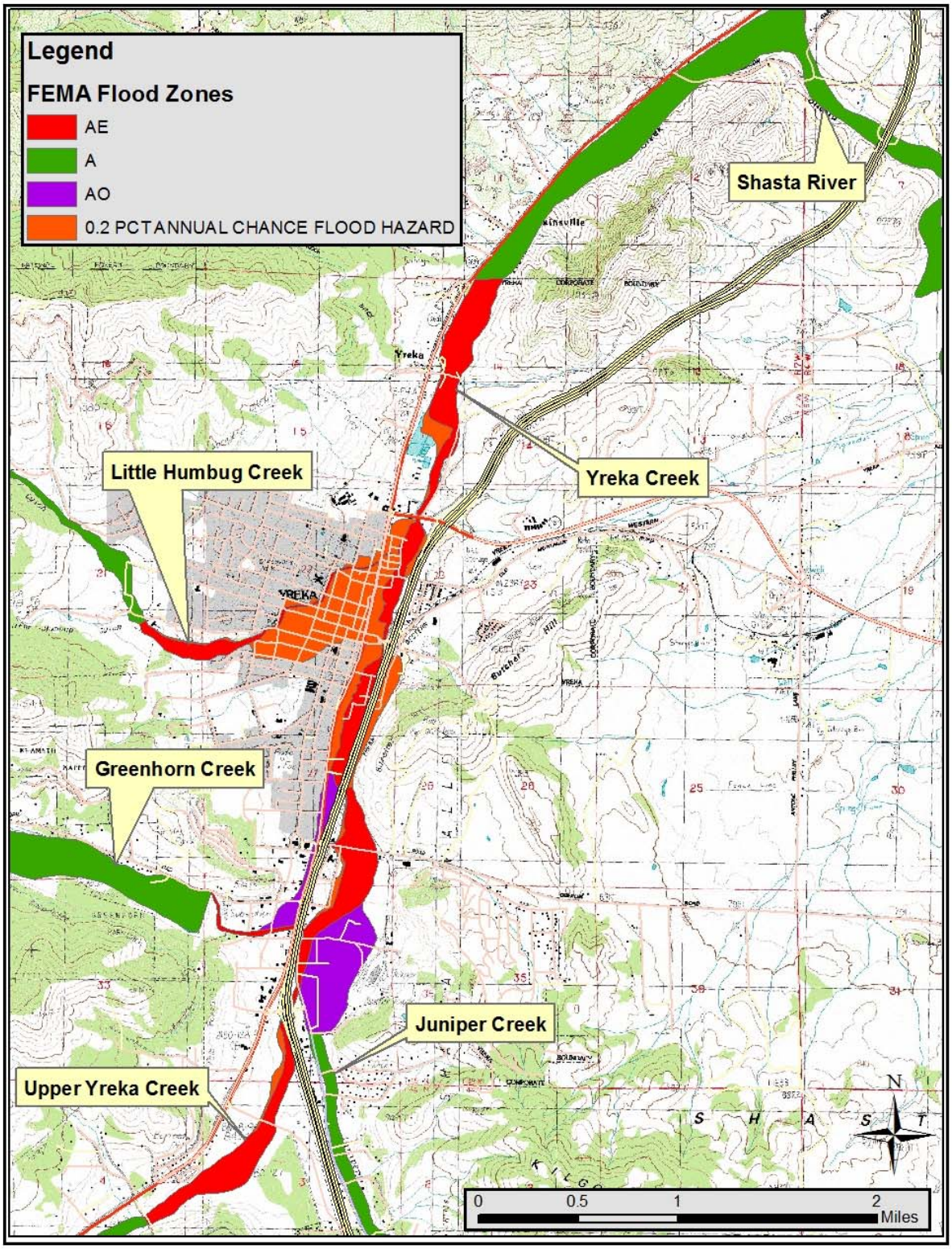
Shasta River Hydrologic Sub-Area

The SWRCB has listed the Shasta River Hydrologic Sub-Area (HA), which includes Yreka Creek and its tributaries, as an impaired water body since 1996. This listing is the result of high organic enrichment and low dissolved oxygen as well as water temperature. These impairments are caused by a number of different factors including agriculture-irrigation tailwater, agriculture-storm runoff, dairies, dam construction, flow regulation/modification, habitat modification, hydromodification, minor municipal point source-dry and/or wet weather discharge, and drainage/filling of wetlands. In 2007, the EPA approved the Total Maximum Daily Load for the Shasta River HA (SWRCB 2010).

FLOODING

The FEMA Flood Insurance Rate Maps (Map Numbers 06093C15576D, 06093C1557D, 06093C1558D, 06063C1559D, and 06093C1100D) for the Greenway Master Plan area show the current potential flood areas. Improvements identified for the Central, North, and South reaches are designed to reduce the potential 100-year flood areas in those reaches. See **Figure 3.8-3** for the existing flood zones within the Greenway Master Plan. See **Figures 3.8-4a** through **3.8-4c** for the existing floodplain areas in the Flood Hazard Reduction (FHR) Project. Additionally, while future projects of the Greenway Master Plan may not occur for years to come, these improvements are also designed to reduce the flooding potential of Yreka Creek, Greenhorn Creek, Humbug Gulch, and Juniper Creek.

T:_CS\Work\Yreka, City of\Floodwater Project\Figures



Source: Hydmet Consulting

FIGURE 3.8-3
Existing Flood Zones

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Source: Hydmet Consulting

Not To Scale

FIGURE 3.8-4A

FHR Central Reach Existing and Improved Floodplain

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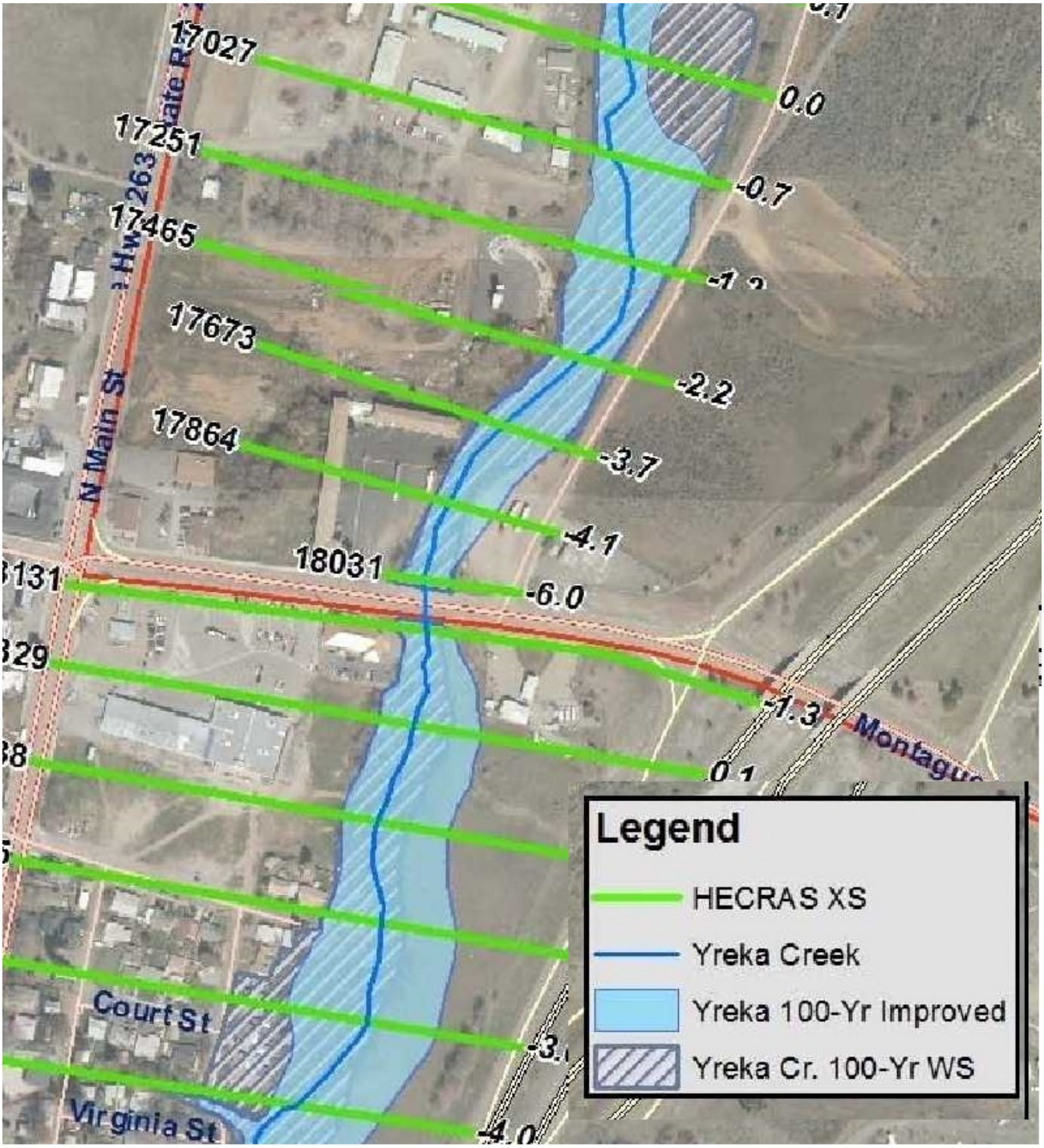

Source: Hydmet Consulting

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FIGURE 3.8-4B

FHR North Reach Existing and Improved Floodplain

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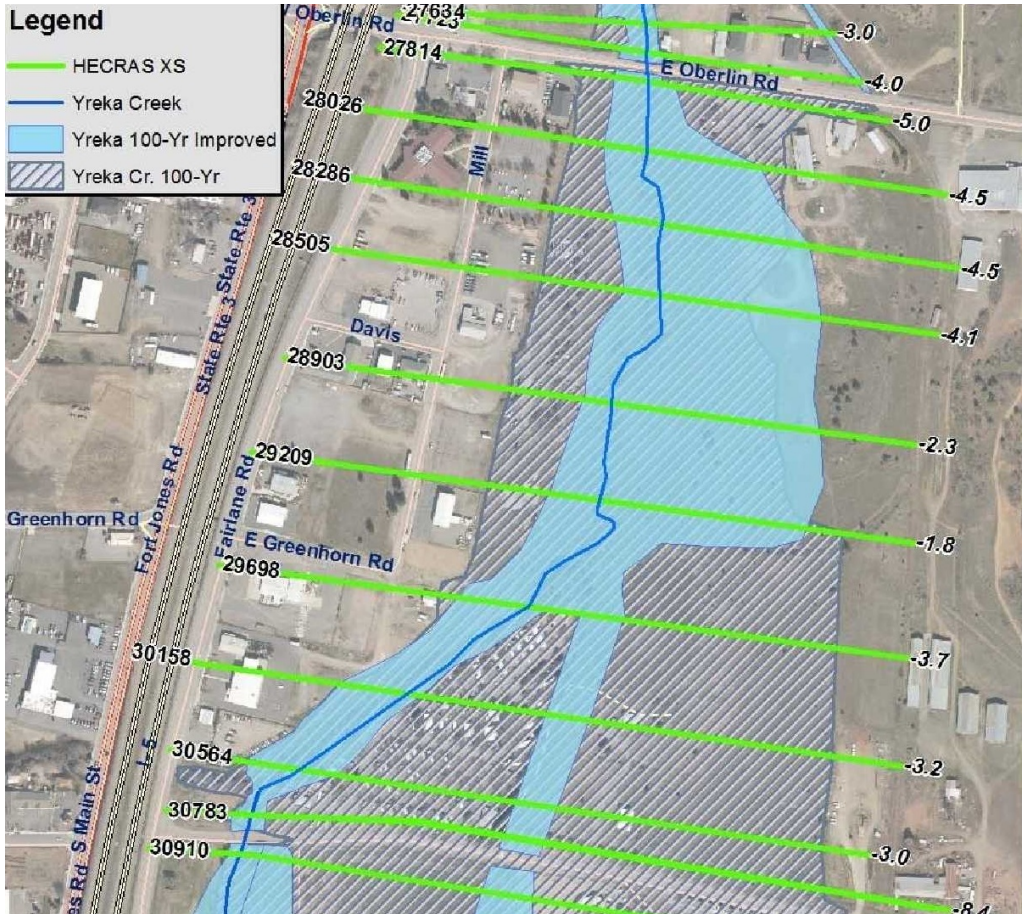

Source: Hydmet Consulting

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FIGURE 3.8-4C

FHR South Reach Existing and Improved Floodplain

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3.8.2 REGULATORY SETTING

FEDERAL

Clean Water Act

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. Section 402(p) of the act establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) Program. The State Water Resources Control Board is responsible for implementing the Clean Water Act and issues NPDES permits to cities and counties through Regional Water Quality Control Boards (RWQCBs). The project site is located in a portion of the state regulated by the North Coast Regional Water Quality Control Board.

The SWRCB has issued a Statewide General Permit (Water Quality Order No. 99-08-DWQ) for construction activities within the state. The Construction General Permit (CGP) is implemented and enforced by the RWQCBs. The CGP applies to construction activity that disturbs 1 acre or more and requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) that identifies best management practices (BMPs) to minimize pollutants from discharging from the construction site to the maximum extent practicable.

On September 2, 2009, the SWRCB adopted a new Construction General Permit (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ) that superseded the existing CGP on July 1, 2010. A summary of the differences between the prior and the current CGP follows (SWRCB 2009).

Rainfall Erosivity Waiver: This General Permit includes the option allowing a small construction site (>1 and <5 acres) to self-certify if the rainfall erosivity value (R value) for their site's given location and time frame compute to be less than or equal to 5.

Technology-Based Numeric Action Levels: This General Permit includes NALs [numeric action levels] for pH and turbidity.

Technology-Based Numeric Effluent Limitations: This General Permit contains daily average NELs [numeric effluent limitations] for pH during any construction phase where there is a high risk of pH discharge and daily average NELs turbidity for all discharges in Risk Level 3. The daily average NEL for turbidity is set at 500 NTU [turbidity] to represent the minimum technology that sites need to employ (to meet the traditional Best Available Technology Economically Achievable (BAT)/Best Conventional Pollutant Control Technology (BCT) standard) and the traditional, numeric receiving water limitations for turbidity.

Risk-Based Permitting Approach: This General Permit establishes three levels of risk possible for a construction site. Risk is calculated in two parts: (1) Project Sediment Risk and (2) Receiving Water Risk.

Minimum Requirements Specified: This General Permit imposes more minimum BMPs and requirements that were previously only required as elements of the SWPPP or were suggested by guidance.

Project Site Soil Characteristics Monitoring and Reporting: This General Permit provides the option for dischargers to monitor and report the soil characteristics at their project location. The primary purpose of this requirement is to provide better risk determination and eventually better program evaluation.

Effluent Monitoring and Reporting: This General Permit requires effluent monitoring and reporting for pH and turbidity in storm water discharges. The purpose of this monitoring is to determine compliance with the NELs and evaluate whether NALs included in this General Permit are exceeded.

Receiving Water Monitoring and Reporting: This General Permit requires some Risk Level 3 dischargers to monitor receiving waters and conduct bioassessments.

Post-Construction Stormwater Performance Standards: This General Permit specifies runoff reduction requirements for all sites not covered by a Phase I or Phase II MS4 NPDES permit, to avoid, minimize, and/or mitigate post-construction stormwater runoff impacts.

Rain Event Action Plan: This General Permit requires certain sites to develop and implement a Rain Event Action Plan (REAP) that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.

Annual Reporting: This General Permit requires all projects that are enrolled for more than one continuous three-month period to submit information and annually certify that their site is in compliance with these requirements. The primary purpose of this requirement is to provide information needed for overall program evaluation and pubic information.

Certification/Training Requirements for Key Project Personnel: This General Permit requires that key personnel (e.g., SWPPP preparers, inspectors) have specific training or certifications to ensure their level of knowledge and skills are adequate to ensure their ability to design and evaluate project specifications that will comply with General Permit requirements.

Linear Underground/Overhead Projects: This General Permit includes requirements for all Linear Underground/Overhead Projects (LUPs).

Certain actions during construction may also need to conform to the waste discharge requirements included in the General Order for Dewatering and Other Low Threat Discharges to Surface Waters (Water Quality Order No. 5-00-175). The Dewatering General Order requires that a permit be acquired for dewatering and other low threat discharges to surface waters, provided that they do not contain significant quantities of pollutants and either (1) are four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 million gallons per day (mgd). Examples of activities that may require the acquisition of such a permit include well development, construction dewatering, pump/well testing, pipeline/tank pressure testing, pipeline/tank flushing or dewatering, condensate discharges, water supply system discharges, and other miscellaneous dewatering/low threat discharges. However, the actions applicable to site development may already be covered under the CGP, and therefore a separate permit under the Dewatering General Order may not be required.

On December 8, 1999, the EPA circulated regulations requiring permits for stormwater discharges from Small Municipal Separate Storm Sewer System operators. Permits for small municipal storm sewer systems (MS4s) generally fall under the Phase II permits program, which regulates non-point

source pollutants. In California, the NPDES Program is administered by the State Water Resources Control Board. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for small MS4s covered under the Clean Water Act to efficiently regulate numerous stormwater discharges under a single permit. Permittees must meet the requirements in Provision D of the General Permit that require the development and implementation of a stormwater management plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

Sections 401 and 404 of the CWA are administered through the Regulatory Program of the US Army Corps of Engineers (USACE) and regulate the water quality of all discharges of fill or dredged material into waters of the United States, including wetlands and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water-quality certification requirements for any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters.

Section 404, Title 33, Section 1344 of the Clean Water Act in part authorizes the USACE to:

- Set requirements and standards pertaining to such discharges: subparagraph (e);
- Issue permits "for the discharge of dredged or fill material into the navigable waters at specified disposal sites:" subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if "the discharge of such materials into such area would have an unacceptable, adverse effect on municipal water supplies and fishery areas:" subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual state or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such state or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain federal or state projects from regulation under this section: subparagraph (r); and
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s).

National Pollutant Discharge Elimination System

As authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. It is the responsibility of the local water boards, which are discussed in more detail

below, to preserve and enhance the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge requirements. Waste discharge requirements for discharges to surface waters also serve as NPDES permits (SWRCB 2011). The NPDES program is discussed in more detail below.

Total Maximum Daily Loads

Under CWA Section 303(d) and California's Porter-Cologne Water Quality Control Act of 1969 (discussed below), the State of California is required to establish beneficial uses of state waters and to adopt water quality standards to protect those beneficial uses. Section 303(d) establishes the Total Maximum Daily Load process to assist in guiding the application of state water quality standards, requiring the states to identify waters whose water quality is "impaired" (affected by the presence of pollutants or contaminants) and to establish a TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects on the beneficial use identified. The establishment of TMDLs is generally a stakeholder-driven process that involves investigation of sources and their loading (pollution input), estimation of load allocations, and identification of an implementation plan and schedule. Where stakeholder processes are not effective, Total Maximum Daily Loads can be established by the RWQCBs or the EPA.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to jurisdictions that comply with FEMA regulations to limit development within floodplains. FEMA also prepares Flood Insurance Rate Maps (FIRMs) to identify areas subject to flooding. These FIRMs provide flood information and identify flood hazard zones. The design standards for flood protection are also established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood having a 1 percent annual chance of occurring.

In addition, FEMA has created requirements and procedures for evaluating earthen levee systems and mapping areas affected by those systems. Levee systems are evaluated for their ability to provide protection from 100-year flood events, with the results documented in the FEMA Levee Inventory System. Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

National Pollutant Discharge Elimination System Permit

The Clean Water Act established the NPDES permit program to regulate municipal and industrial discharges to surface waters of the United States from their municipal separate storm sewer systems (MS4s). Federal NPDES permit regulations have been established for a broad range of discharges, including point source municipal waste discharges and non-point source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge, prohibitions on discharges not specifically allowed under the permit, and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

STATE

Porter-Cologne Water Quality Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act to preserve, enhance, and restore the quality of the state's water resources. The act established the State Water Resources Control Board and nine Regional Water Quality Control Boards as the principal state agencies with the responsibility for controlling water quality in California. Under the act, water quality policy is established, water quality standards are enforced for both surface water and groundwater, and the discharges of pollutants from point and non-point sources are regulated. The act authorizes the State Water Resources Control Board to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water (SWRCB 2014b).

State Water Resources Control Board

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality Control Boards located in the state's major watersheds. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters (SWRCB 2011). The State Water Resources Control Board is responsible for implementing the Clean Water Act and issues NPDES permits to cities and counties through Regional Water Quality Control Boards.

AB 3030 Groundwater Management Plans

In 1992, the State passed Assembly Bill (AB) 3030 (and later amended it in Senate Bill 1938), which provides authority for local water agencies to adopt groundwater management plans if certain procedures are followed (California Water Code Section 10753). These plans involve collaboration among numerous agencies and thus offer opportunities for local governments to participate in groundwater management planning in cooperation with water providers. No new level of government is formed under AB 3030, and action is voluntary rather than mandatory. The California Water Code also provides the local water supplier with the powers of a water replenishment district in order to raise revenue to pay for facilities used for basin management (including extraction, recharge, conveyance, and water quality).

REGIONAL

North Coast Regional Water Quality Control Board

The North Coast RWQCB, which as previously described regulates the portion of the state in which Yreka and the project site are located, oversees planning, monitoring, and enforcement techniques for surface water and groundwater quality in the North Coast region, including the project site. A basin plan includes more specific information for specific waterways in the region in terms of establishing monitoring techniques to control pollutant levels in the waterways. The RWQCB also monitors stormwater quality from construction activities through a NPDES permitting process. The RWQCB is responsible for establishing water quality standards and objectives that protect the beneficial uses of various waters. In Yreka, the North Coast RWQCB is responsible for protecting surface water and groundwater from both point and non-point sources of pollution.

North Coast Regional Water Quality Control Plan

The Water Quality Control Plan for the North Coast Region, also known as the Basin Plan, covers all water basins including Lower Klamath Lake and Lost River Basins draining into the Pacific Ocean from the California-Oregon border southerly to the southerly boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma counties (North Coast RWQCB 2011). The Basin Plan describes the beneficial uses to be protected in these waterways, water quality objectives to protect those uses, and implementation measures to make sure those objectives are achieved. The North Coast Region encompasses a total area of approximately 19,390 square miles, including 340 miles of scenic coastline and remote wilderness areas, as well as urbanized and agricultural areas (North Coast RWQCB 2011, p. 1-5.00).

National Pollutant Discharge Elimination System

The NPDES permit system, as previously described, was established in the Clean Water Act to regulate municipal and industrial discharge to surface waters of the United States. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Permits require the municipal authority to evaluate the quality of its stormwater discharge and receiving waters, identify areas of pollutant loading, and implement a program of best management practices (BMPs) to control pollutant discharges to the maximum extent practicable. It is within the existing authority of the North Coast RWQCB to issue a NPDES permit for any stormwater outfall that discharges to waters in the region.

Municipal Storm Water Permitting Program

Discharges from municipal separate storm sewer systems (MS4s) are regulated because of concern over the high concentration of pollutants found in those discharges. MS4 permits were issued by the various RWQCBs in two phases.

Under Phase I, which started in 1990, the RWQCBs have adopted NPDES General Permit stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

As part of Phase II, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

The MS4 permits require the discharger to develop and implement a stormwater management plan with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Clean Water Act Section 402(p). The management plans specify the best management practices that will be used to address certain program areas. The program areas include public education and outreach, illicit discharge detection and elimination, construction and post-construction, and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

General Construction Activity Storm Water Permits and Stormwater Pollution Prevention Plans

In accordance with NPDES regulations, the State requires that any construction activity affecting 1 acre or more obtain a General Construction Activity Storm Water Permit (General Permit) to minimize the potential effects of construction runoff on receiving water quality. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ, adopted September 2, 2009, and effective as of July 1, 2010.

General Permit applicants are required to submit to the appropriate regional board Permit Registration Documents for the project, which include a Notice of Intent, a risk assessment, a site map, a signed certification statement, an annual fee, and a stormwater pollution prevention plan. The permit program is risk based wherein a project's risk is based on the project's potential to cause sedimentation and the risk of such sedimentation on the receiving waters. A project's risk determines its water quality control requirements ranging from Risk Level 1, which consists of only narrative effluent standards, implementation of BMPs, and visual monitoring, to Risk Level 3, which consists of numeric effluent limitations, additional sediment control measures, and receiving water monitoring. Additional requirements include compliance with post construction standards focusing on low impact development (LID), preparation of rain event action plans, increased reporting requirements, and specific certification requirements for certain project personnel.

The SWPPP must include implementing best management practices to reduce construction effects on receiving water quality by implementing erosion control measures and reducing or eliminating non-stormwater discharges. Examples of typical construction best management practices included in SWPPPs include, but are not limited to, using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutants from discharging to the city's drainage system or receiving waters.

LOCAL

City of Yreka General Plan

The Yreka General Plan has multiple programs to ensure water quality and to manage stormwater and flood protection. For example, Program CO.6.B includes requirements for new development projects to identify specific measures for minimizing project-related erosion and resulting siltation of drainage channels, while Program CO.6.C requires a grading and erosion control plan to be submitted with each tentative parcel and tentative subdivision map. Additional programs require that development cannot not be approved in areas which are subject to flooding without prior review and approval of plans for improvements which provide a minimum flood protection level equal to the 100-year storm event (Program PH.2.B) and that new structures within a 100-year flood zone must be completely mitigated through proper design (Program PH.2.C). The General Plan also addresses potential flooding caused by inadequate storm drainage facilities. For example, Program PH.2.E requires the provision of adequate storm drainage improvements to prevent flooding in areas that are prone to flood hazards. Program PH.2.E restricts development in areas where significant drainage and flooding problems are known to exist until adequate drainage and/or flood control facilities can be provided, requiring that new development provide flood

retention facilities to avoid increasing peak storm runoff in drainage channels and that all natural drainages be protected to the extent feasible.

City of Yreka Municipal Code

Municipal Code Chapter 11.34, Flood Damage Prevention, illustrates the City's concern with the potential for flooding. This chapter includes a number of standards designed to protect humans and buildings in the event of a flood. Section 11.34.510 provides the standards of construction for all development within a 100-year flood zone. Section 11.34.510(c) requires that all residential buildings located in a special flood hazard area be designed so the lowest floor, including any basements, be elevated to or above the base flood elevation. Nonresidential buildings can be elevated to the base flood elevation and/or be flood-proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water.

3.8.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

California Environmental Quality Act (CEQA) Guidelines Appendix G states that a project may have a significant effect on the environment if the project would result in any of the following:

1) Violate any water quality standards or waste discharge requirements.
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have be granted).
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner that would result in substantial erosion or siltation on- or off-site.
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.
5) 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.
6) Otherwise substantially degrade water quality.
7) Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
9) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
10) Inundation by seiche, tsunami, or mudflow.

METHODOLOGY

The hydrology and water quality analysis presented below is based on a review of published information, reports, and plans regarding regional and local hydrology, climate, topography, and geology obtained from private and governmental agencies as well as from Internet websites. Primary sources include the Yreka General Plan, the North Coast RWQCB's (2011) Basin Plan, California Stormwater Quality Association's (2009) Best Management Practices Handbooks, the Yreka Creek Hydrology Final Report (Hydmet Consulting 2015), the Geomorphic Analysis for Yreka Creek Greenway Floodplain Construction Projects (GeoServ 2016a), and FEMA Flood Insurance Rate Maps.

Water Quality

The proposed development plans for the project and general water quality information sources were reviewed to determine potential sources and types of pollutants that could be generated by project construction and/or operation. The SWRCB statewide permit requirements and proposed drainage improvements from the Greenway Master Plan and FHR Project were reviewed to determine whether water quality would be sufficiently protected or if further mitigation would be required.

Flooding

The FEMA Flood Insurance Rate Map covering the site was reviewed to determine whether any portion of the project site is designated as a flood hazard zone. In addition, the proposed site plans were reviewed to determine whether any development is proposed in such areas. The current 100-year flood zone for the overall Master Plan area is shown in **Figure 3.8-3**. A hydraulic report was prepared by Hydmet Consulting (2015) for the project (see **Appendix 3.8**). Based on this report, the 100-year flood zone was identified as specific areas as shown in **Figure 3.8-5a** through **Figure 3.8-5h**. These figures also show the anticipated 100-year flood area following the Master Plan improvements.

The Hydrologic Engineering Center (HEC) in Davis, California, developed the Hydrologic Modeling System (HEC-HMS) which has long been one of the industry-standard programs for hydrologic analysis. It is a single storm event, lumped parameter model, but includes several options for modeling rainfall, losses, unit hydrographs, and stream routing. It was designed to simulate the complete hydrologic processes of dendritic watershed systems. The software includes many traditional hydrologic analysis procedures such as event infiltration, unit hydrographs, and hydrologic routing (Hydmet Consulting 2015, p. 13). The HEC-HMS includes the River Analysis System (RAS) to aid hydraulic engineers in channel flow analysis and floodplain determination. It includes numerous data entry capabilities, hydraulic analysis components, data storage and management capabilities, and graphing and reporting capabilities. HEC-RAS is a computer program that models the hydraulics of water flow through natural rivers and other channels. In addition, **Figure 3.8.5a** through **Figure 3.8.5h** include the HEC-RAS modeling showing the cross sections and the cross-section identification number (stream distance in feet from the mouth or confluence) and the 100-year water surface elevation.

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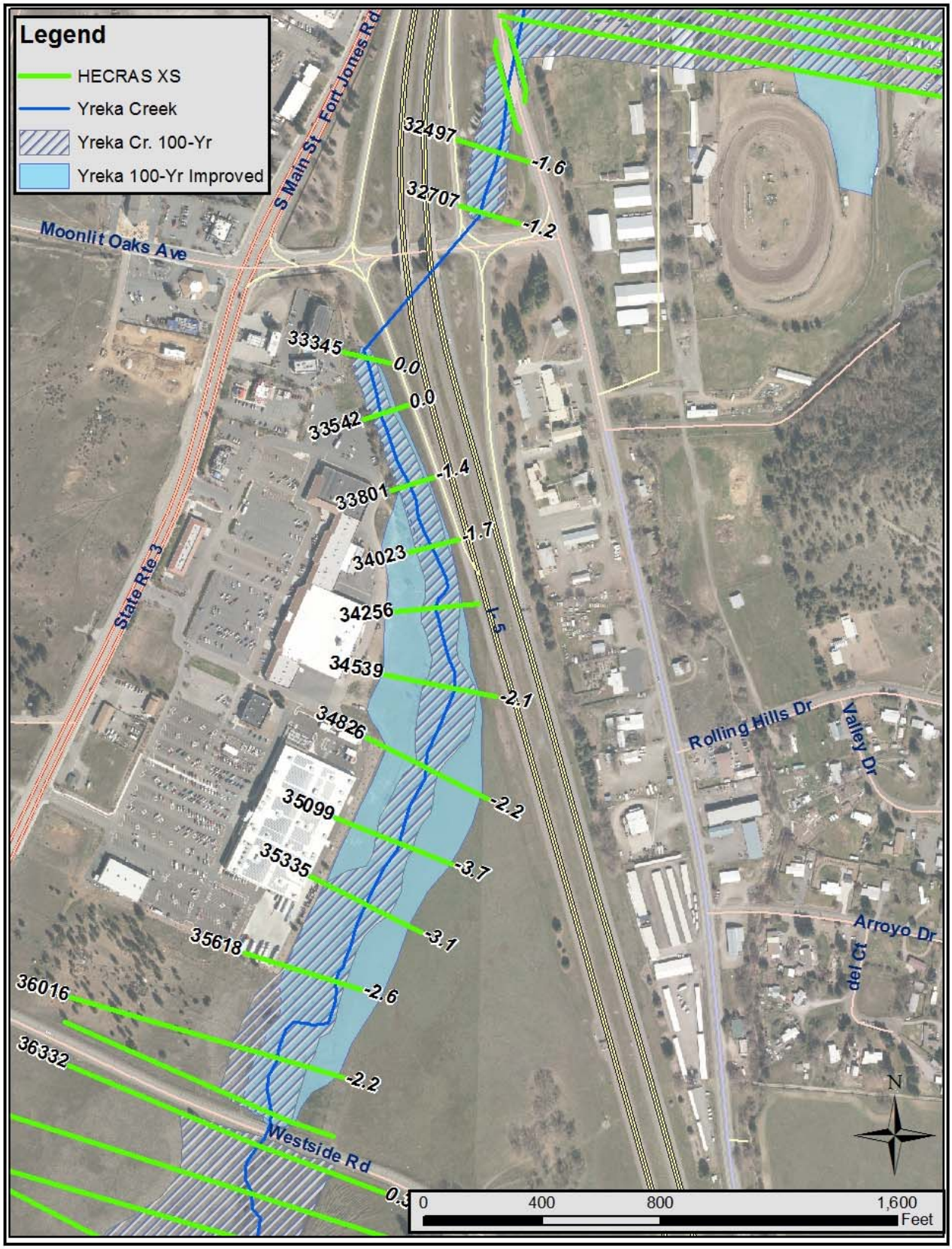

Source: Hydmet Consulting

FIGURE 3.8-5A

Yreka Creek Existing and Improved Floodplain

Michael Baker INTERNATIONAL

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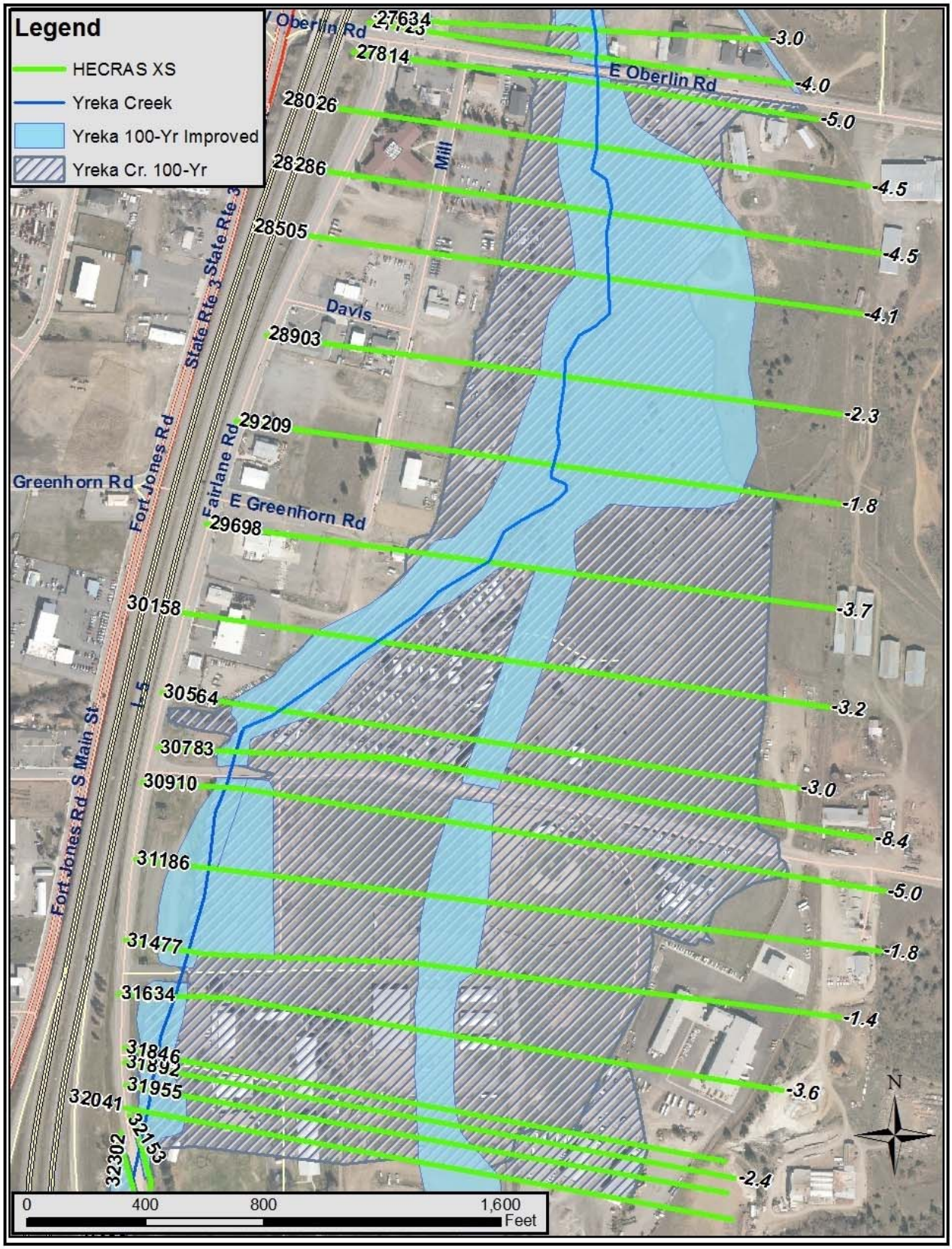

Source: Hydmet Consulting

FIGURE 3.8-5B

Yreka Creek Existing and Improved Floodplain

Michael Baker INTERNATIONAL

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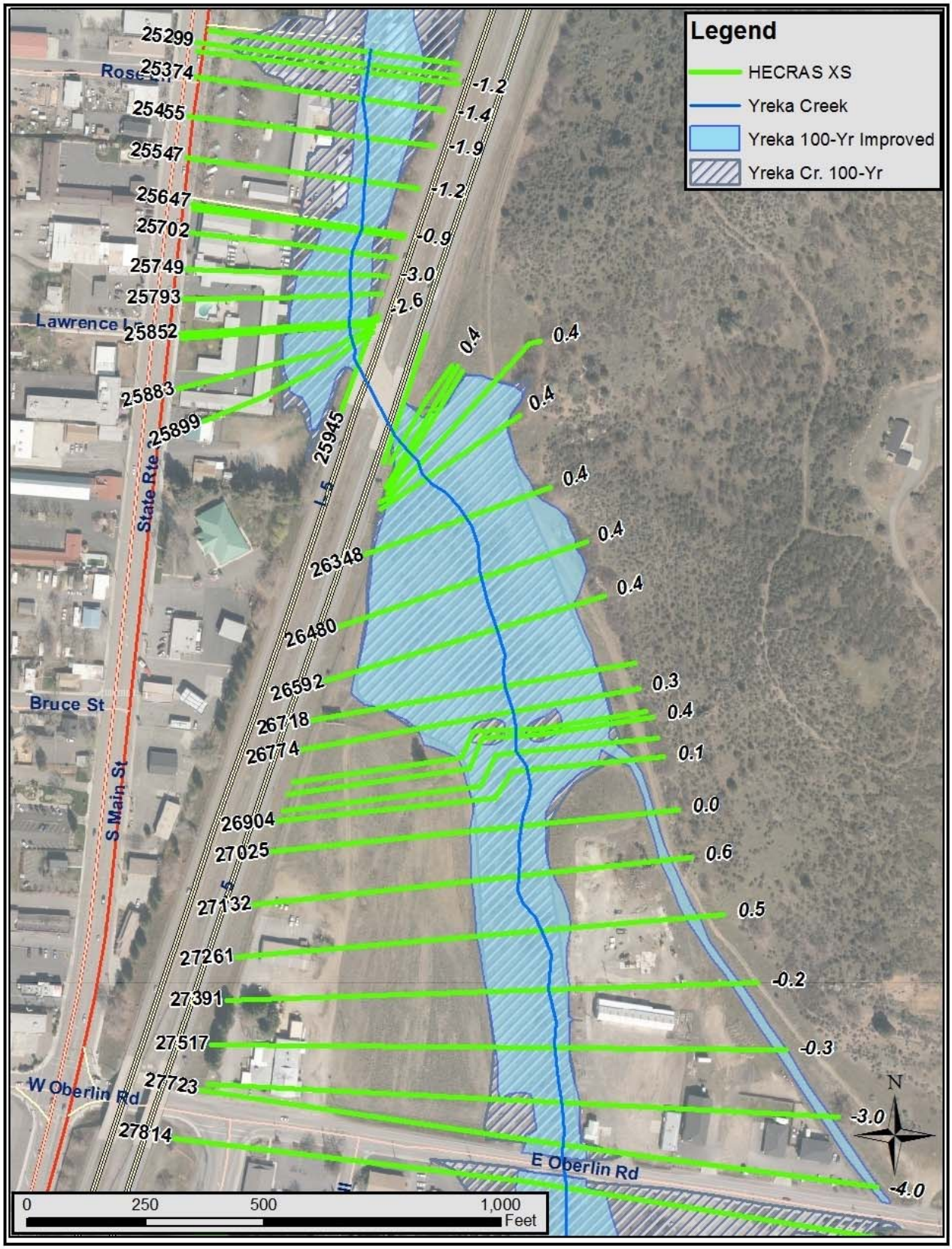

Source: Hydmet Consulting

FIGURE 3.8-5C

Yreka Creek Existing and Improved Floodplain

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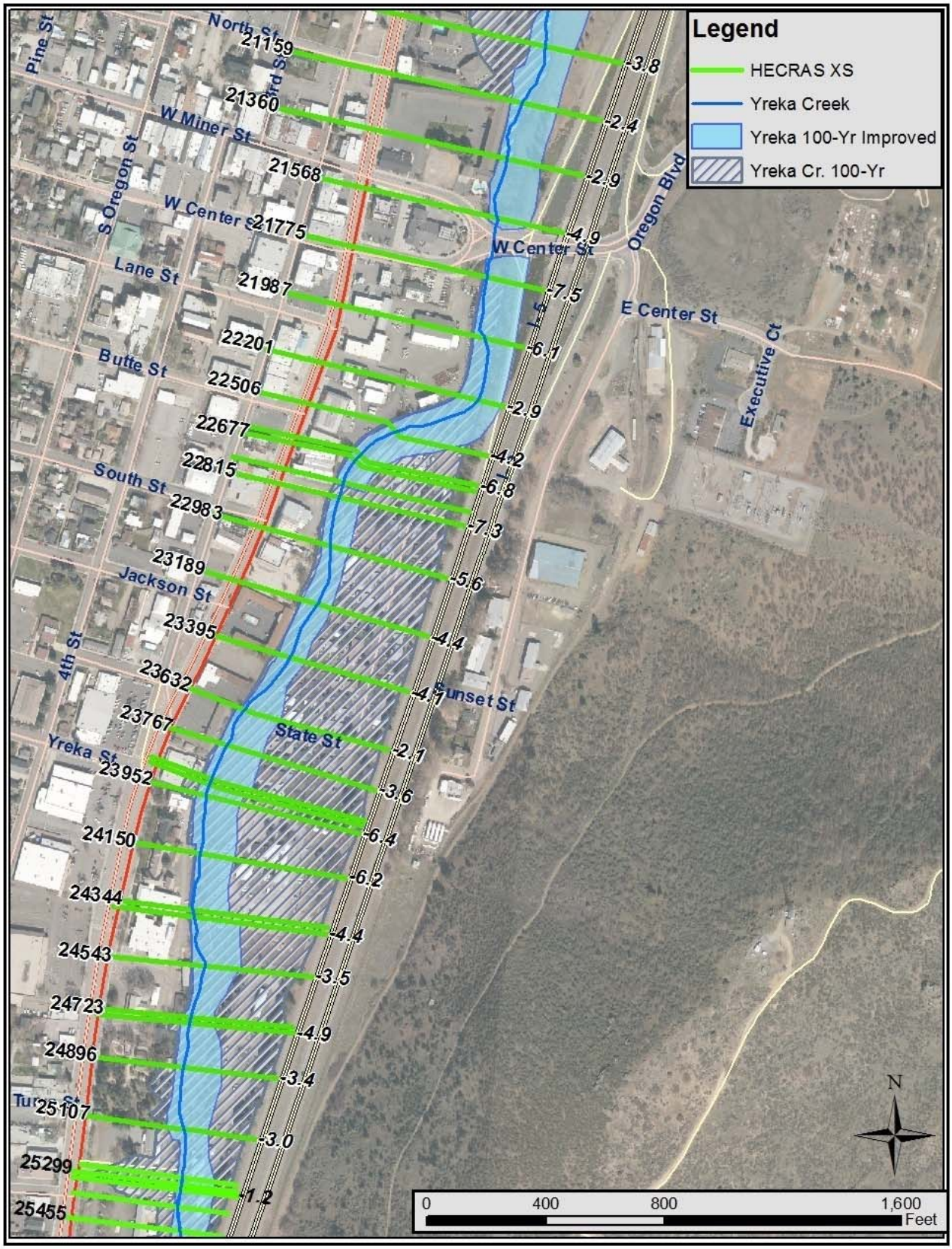

Source: Hydmet Consulting

FIGURE 3.8-5D

Yreka Creek Existing and Improved Floodplain

Michael Baker INTERNATIONAL

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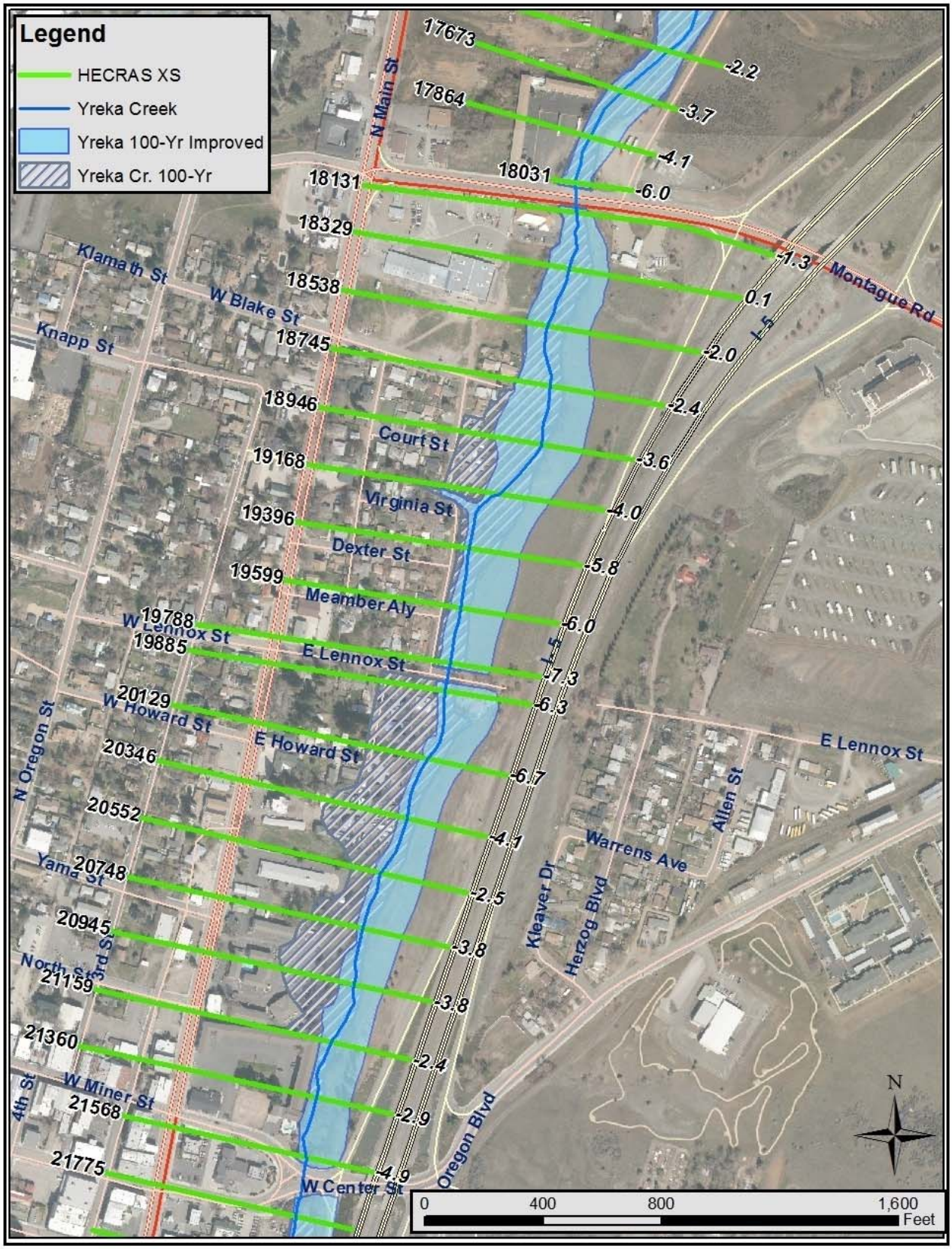

Source: Hydmet Consulting

FIGURE 3.8-5E

Yreka Creek Existing and Improved Floodplain

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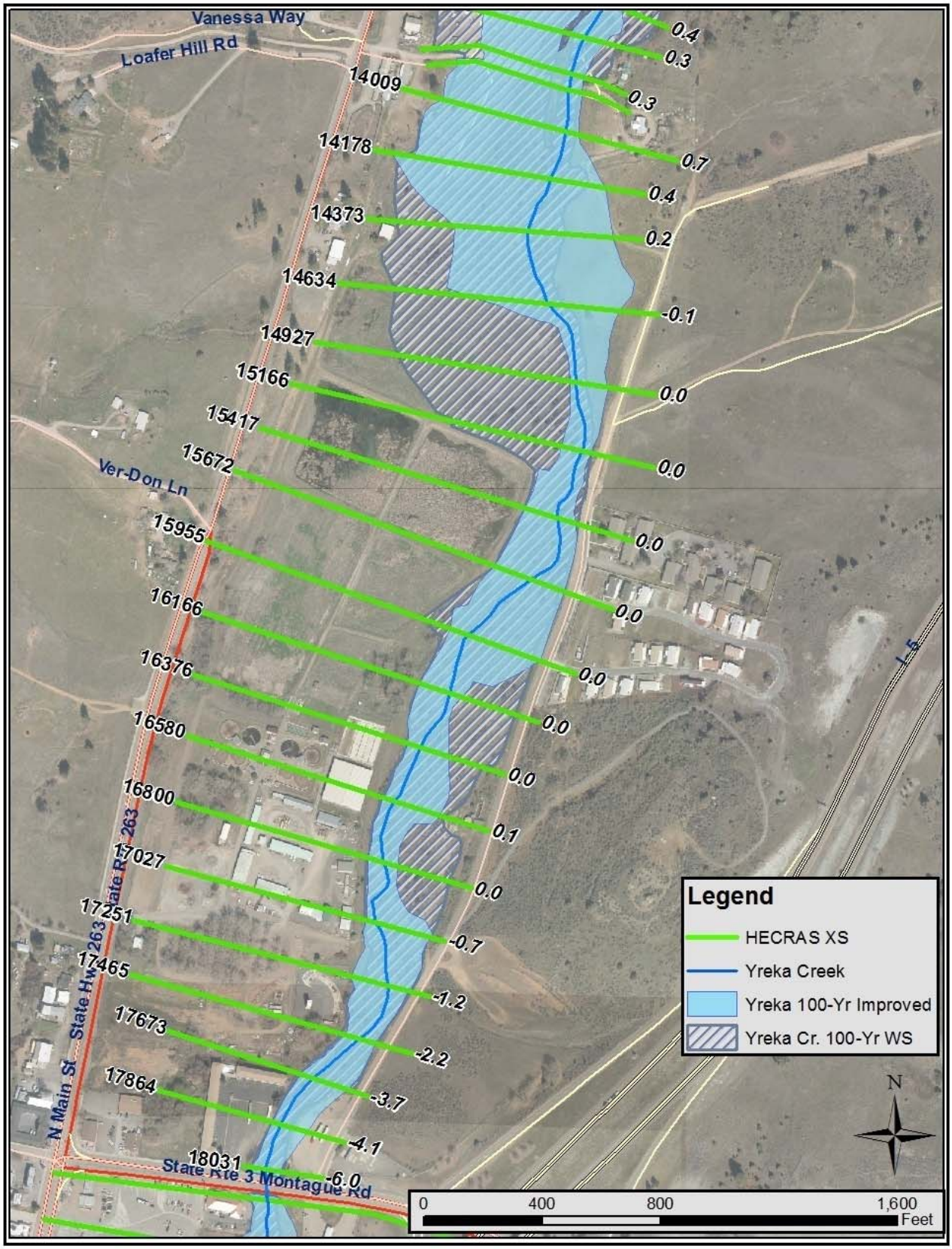

Source: Hydmet Consulting

FIGURE 3.8-5F

Yreka Creek Existing and Improved Floodplain

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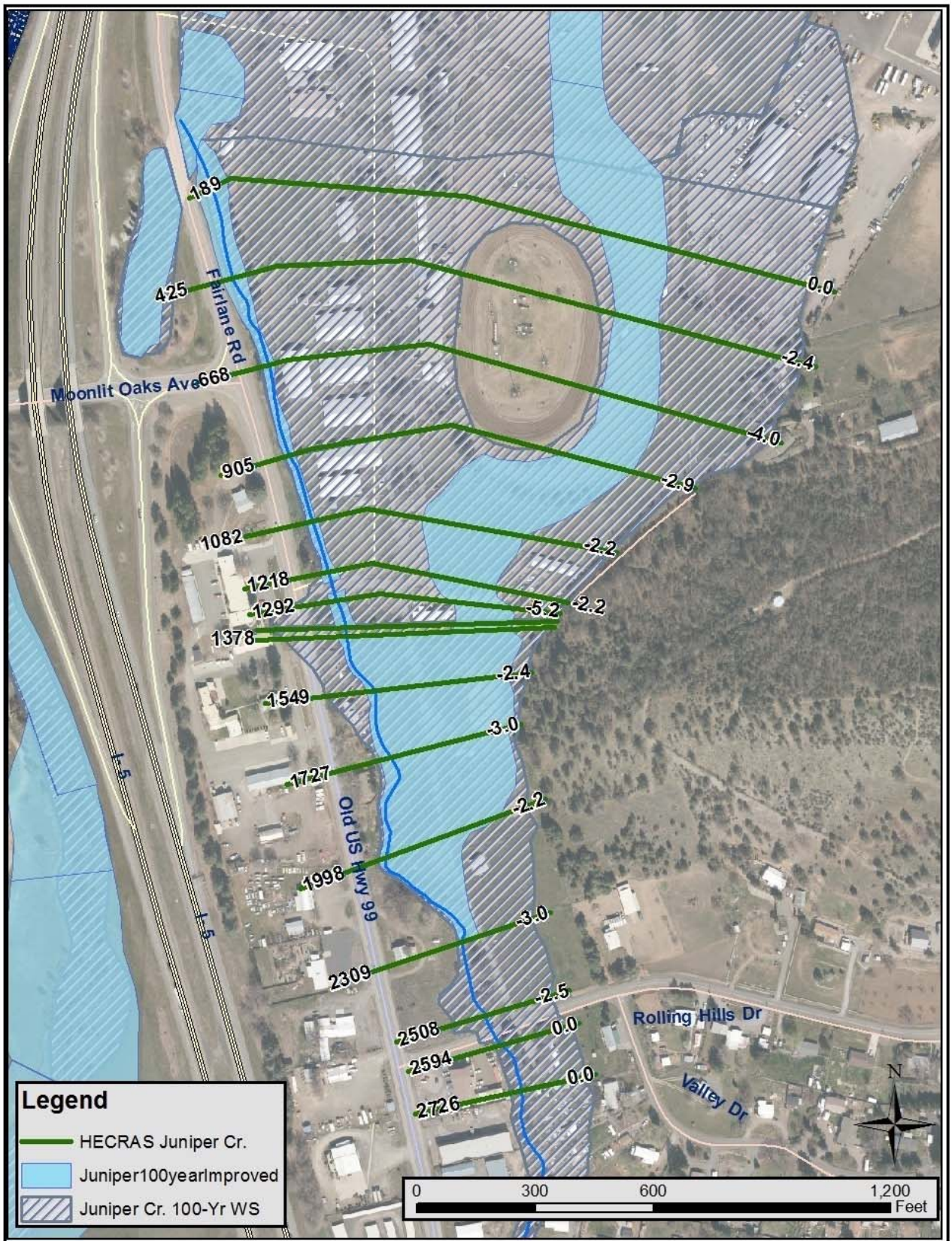

Source: Hydmet Consulting

FIGURE 3.8-5G

Juniper Creek Existing and Improved Floodplain

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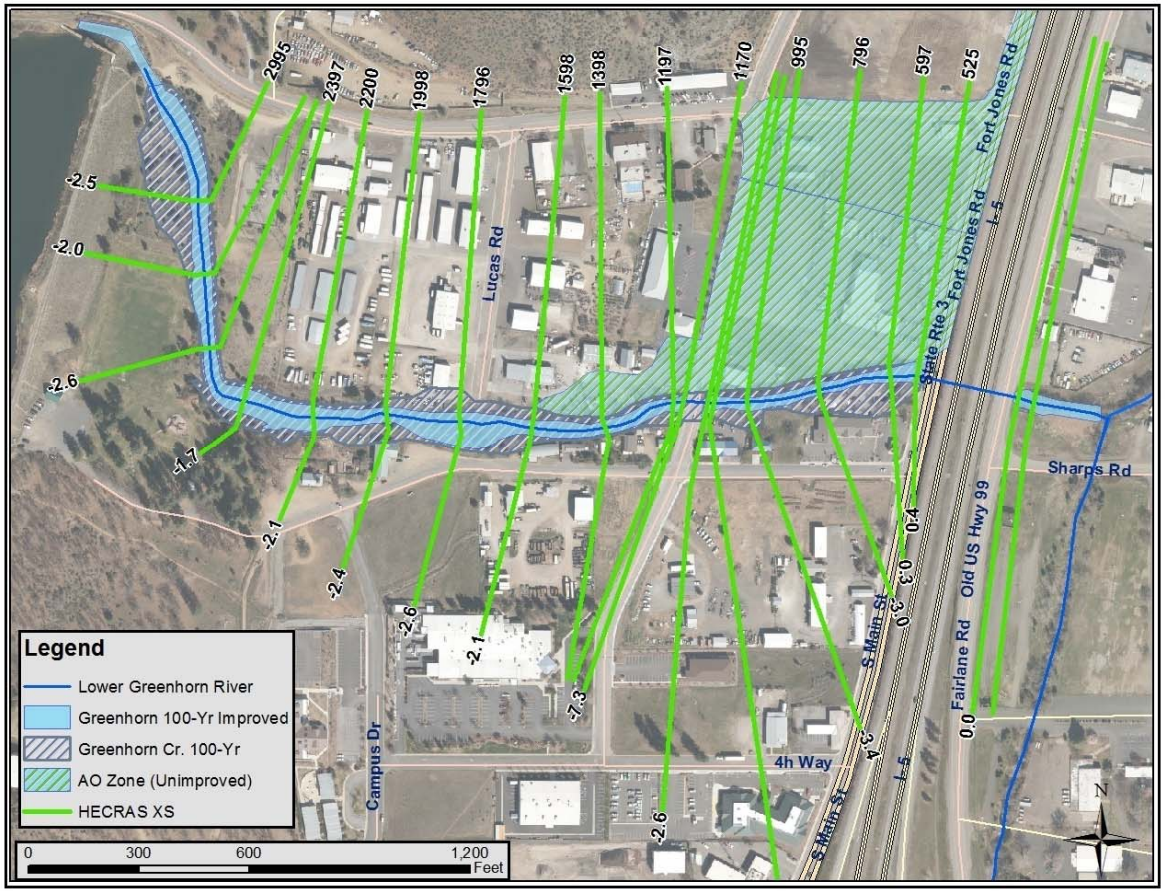

Source: Hydmet Consulting

FIGURE 3.8-5H

Lower Greenhorn Creek Existing and Improved Floodplain

Michael Baker INTERNATIONAL

PROJECT IMPACTS AND MITIGATION MEASURES

Violate Water Quality Standards or Waste Discharge Requirements (Standard of Significance 1)

Impact 3.8.1 Construction and operational activities associated with the proposed project could result in erosion and water quality degradation of downstream surface water and groundwater resources. Compliance with the requirements of the SWRCB's Construction General Permit would minimize the potential for such degradation. This impact would be **less than significant.**

Greenway Master Plan

Construction Impacts

Future projects of the Master Plan would involve at least some construction adjacent to and possibly in the creek. Despite implementation of best management practices, construction would introduce sediments and other contaminants typically associated with construction into stormwater runoff, potentially resulting in the degradation of downstream surface water and groundwater quality.

The SWRCB is responsible for implementing the Clean Water Act and has issued a Statewide General Permit (Water Quality Order 2009-0009-DWQ) for construction activities in the state (see the Regulatory Setting subsection above). In the Master Plan area, the Construction General Permit (CGP) is implemented and enforced by the North Coast RWQCB. In accordance with the requirements of the CGP, prior to construction of the proposed project, a risk assessment must be prepared and submitted to the North Coast RWQCB to determine the project's risk level and associated water quality control requirements. These requirements will, at a minimum, include the preparation and implementation of a SWPPP identifying specific best management practices to be implemented and maintained on the site in order to comply with the applicable narrative effluent standards.

The best management practices that must be implemented as part of a SWPPP can be grouped into two major categories: (1) erosion and sediment control BMPs and (2) non-stormwater management and materials management BMPs. Erosion and sediment control BMPs fall into four main subcategories:

- Erosion controls
- Sediment controls
- Wind erosion controls
- Tracking controls

Erosion controls include practices to stabilize soil, to protect the soil in its existing location, and to prevent soil particles from migrating. Examples of erosion control BMPs are preserving existing vegetation, mulching, and hydroseeding. Sediment controls are practices to collect soil particles after they have migrated, but before the sediment leaves the site. Examples of sediment control BMPs are street sweeping, fiber rolls, silt fencing, gravel bags, sand bags, storm drain inlet protection, sediment traps, and detention basins. Wind erosion controls prevent soil particles from leaving the site in the air. Examples of wind erosion control BMPs include applying water or other

dust suppressants to exposed soils on the site. Tracking controls prevent sediment from being tracked off-site via vehicles leaving the site to the extent practicable. A stabilized construction entrance not only limits the access points to the construction site, but also functions to partially remove sediment from vehicles prior to leaving the site.

Non-stormwater management and material management controls reduce non-sediment-related pollutants from potentially leaving the construction site to the extent practicable. The Construction General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges (such as irrigation and pipe flushing and testing). Non-stormwater BMPs tend to be management practices with the purpose of preventing stormwater from coming into contact with potential pollutants. Examples of non-stormwater BMPs include preventing illicit discharges and implementing good practices for vehicle and equipment maintenance, cleaning, and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include:

- Good housekeeping activities such as storing of materials covered and elevated off the ground in a central location.
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance.
- Providing a central location for concrete washout and performing routine maintenance.
- Providing several dumpsters and trash cans throughout the construction site for litter/floatable management.
- Covering and/or containing stockpiled materials and overall good housekeeping on the site.

The CGP also requires that construction sites be inspected before and after storm events and every 24 hours during extended storm events. The purpose of the inspections is to identify maintenance requirements for the BMPs and to determine the effectiveness of the BMPs that are being implemented. The SWPPP is a "living document" and as such can be modified as construction activities progress. Additional requirements include compliance with post construction standards focusing on low impact development (LID) and preparation of rain event action plans.

The SWRCB has also issued a Statewide General Permit (Water Quality Order R5-2008-0081, NPDES No. CAG995001) for dewatering and other low-threat discharges to surface waters in the state. Should construction of the proposed project require dewatering, the City would be required to submit a Notice of Intent, as well as a Best Management Practices Plan, to comply with the general permit. The BMP Plan would include disposal practices to ensure compliance with the general permit such as the use of sediment basins or traps, dewatering tanks, or gravity or pressurized bag filters. Monitoring and reporting would also be performed to ensure compliance with the permit.

Compliance with the various requirements of the SWRCB statewide general permits for construction and dewatering would ensure that water quality degradation during the

construction phase of the proposed project would be minimized. Therefore, water quality impacts related to construction are **less than significant.**

Operational Impacts

The various projects in the Greenway Master Plan may have operational impacts to water quality. However, lowering and widening floodplains, as described in the Greenway Master Plan, will benefit water quality in ta number of ways, such as:

1. Reducing soil erosion by lowering peak flows and reducing hydraulic forces.
2. Increasing capture of fine sediment by spreading out high flows over restored floodplains.
3. Filtering out contaminants by flowing through vegetated floodplains.
4. Filtering additional contaminants by moving storm drain outfalls to far edge of floodplains.
5. Avoiding contaminant-producing flood damage to buildings and other infrastructure.
6. Increasing groundwater recharge, thereby increasing base flows and lowering summertime stream temperatures.

Floodplain lowering and widening will also benefit water quality by initiating a natural process to undo substrate stratification caused by past gold dredging. Most of Yreka and Greenhorn creeks within the city were dredged. A natural stream substrate consists of mixed particle sizes, but gold dredging results in a layered substrate with the smallest particles at the bottom and the coarse gravel and cobbles at the top. As a result, the water table drops to the middle layer, which is composed of sand. By creating a lower and wider floodplain in dredged areas, high flows will spread out and suspended sediments will drop out and gradually clog interstitial spaces between the cobble and gravel, resulting in a gradual raising of the water table. This also results in re-establishment of good topsoil for riparian vegetation.

Recreational areas often practice conventional landscaping methods and maintain the areas using fertilizers, herbicides, pesticides, and algaecides, which can enter stormwater runoff or flow directly into stream channels. Additionally, use of the Master Plan's parking areas, trails, and public facilities may result in contaminated runoff during storm events. However, one of the main purposes of the Greenway Master Plan is the protection of the Yreka Creek watershed. The following Master Plan goals, objectives, and action items assist in the protection of the watershed and reduce potential water quality impacts.

Goal 3: Design improvements to help meet stricter water quality regulations and to reduce the size and scope of water quality improvements needed.

Goal 4: Provide a tool to assist the community in seeking grants and achieving the Greenway improvements.

Objective 3: To provide an updated Greenway Master Plan to serve as the basis for a comprehensive watershed plan to comply with Total Maximum Daily Load (TMDL) requirements for sediment and dissolved oxygen under the Clean Water

Act that were implemented to protect Coho salmon in the Shasta River and tributaries.

Objective 4: To provide a storm drainage system that will allow smaller storm events to stay above ground and allow large events to flow into the underground storm drainage system. This design will achieve MS4 goals because most urban runoff pollutants come from smaller storm events ("first flush").

Action Item 14: Keep runoff from smaller storm events at the ground surface where it can move through bioswales, small retention basins, and natural ephemeral drainages before entering Yreka Creek.

Action Item 15: As a means of intercepting and naturally processing stormwater runoff from buildings, parking lots, large lawn areas, equipment and storage areas, and other impervious or compacted surfaces bioswales with small retention basins, such as the Evergreen School Bioswale Project, are to be implemented for existing parks, schools, churches, public facilities, and commercial and industrial properties within the City of Yreka, where there is room and as opportunities allow.

Action Item 16: When using restoration techniques that involve lowering and widening of areas to create readily accessible floodplains, including overflow and side channels, some of the standard Best Management Practices (BMPs) required in SWPPPs, such as silt fencing and straw rolls, are not necessarily compatible with the design approach. For these reasons, monitoring requirements associated with SWPPP implementation up to the time that the project is deemed completed should not include floodplain restoration, and one way to achieve this would be for North Coast Regional Water Quality Control Board to treat Yreka Creek Greenway projects as Risk Level 1.

Compliance with these goals, objectives, and action items would result in the filtration of the water flowing to the various creeks of the Greenway Master Plan and ensure that the water flowing to the creeks would be of good quality. As such, water quality impacts related to operational aspects of the Master Plan are **less than significant.**

Flood Hazard Reduction Project

Construction Impacts

As discussed in Section 2.0, Project Description, construction of the FHR Project would result in the removal/relocation of thousands of cubic yards of earth, removal and replanting of large areas of vegetation, widening of the creek channel, and realigning sections of the creek. All of these improvements would potentially introduce sediments and other contaminants typically associated with construction into stormwater runoff, potentially resulting in the degradation of downstream surface water and groundwater quality. Stormwater flowing over the project site during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, gross pollutants, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. The proposed project has the potential to result in the

generation of new dry weather runoff containing these pollutants and also has the potential to increase the concentration and/or total load of the pollutants in wet weather stormwater runoff. Erosion potential and the possibility of water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In the case of the proposed project, grading and cut/fill associated with the site improvements would be the primary contributors to erosion and water quality degradation.

As stated previously, the SWRCB is responsible for implementing the Clean Water Act and has issued a Statewide General Permit (Water Quality Order 2009-0009-DWQ) for construction activities in the state. Construction activities for the FHR Project would be required to use the best management practices discussed under the construction impacts for the Greenway Master Plan.

Compliance with the various requirements of the SWRCB statewide general permits for construction and dewatering would ensure that water quality degradation during the construction phase of the FHR Project would be minimized. Therefore, this impact is **less than significant**.

Operational Impacts

The proposed improvements in the FHR Project would reduce the floodplain in the FHR reaches by 3 or more feet. As shown in **Figure 3.8-4a** through **Figure 3.8-4c,** this reduction would result in the removal of several acres out of the 100-year flood zone and provide added flood protection to those properties along Yreka Creek. Once construction is completed, including revegetation, the improvements to the FHR Project reaches would actually remove areas that currently could impact water quality during a 100-year storm event. As a result, these areas would have less potential to affect water quality, as they would no longer be subject to flooding and all of the water quality impacts resulting from this flooding. Additionally, improvements to the three reaches are designed to improve water quality through the use of bioswales and retention ponds during a storm event and thereby reduce the potential for pesticides, oils, and other chemicals as well as sedimentation to flow into the creek. As such, this impact would be **less than significant**.

Mitigation Measures

None required.

Groundwater Recharge (Standard of Significance 2)

Impact 3.8.2 The proposed project would introduce impervious surfaces in the form of structures to a previously undeveloped piece of land. This would not result in an incremental reduction in recharge of the local groundwater aquifer. This impact is considered **less than significant**.

Greenway Master Plan

The Greenway Master Plan is located in the Shasta Valley Groundwater Basin. All units in the Shasta Valley are hydrologically interconnected. The volcanic units provide storage and recharge to the basin and also serve as recharge and storage for areas outside of the basin. While little is known about the recharge capabilities of Yreka Creek, this EIR assumes that the creek provides some groundwater recharge.

Future improvements identified in the Master Plan would result in the removal of impervious surfaces such as buildings while increasing potential groundwater recharge areas such as greenways, retention basins, and bioswales. These improvements would increase the potential for groundwater recharge within the Master Plan area. However, the Master Plan identifies 12 miles of primary trails and 2 miles of secondary trails. These trails would most likely be constructed of concrete or pavement. While these trails would result in the addition of impervious surfaces to the area, the proposed width of these trails, 8 feet for primary trails and 6 feet for secondary trails, would allow water to flow onto the surrounding soil and not pond on the trails to a substantial degree. Eventually, this water would either be absorbed into the soil or flow into the various bioswales and retention ponds or the creeks themselves. The trails would not impede the ability for groundwater recharge. Therefore, the project would have little effect on groundwater recharge.

The proposed Greenway Master Plan would not require the use of groundwater. All future water which may be required for future projects in the Master Plan would be required to connect to the City's water system. The City receives its water from surface supplies and does not rely on groundwater for this supply.

The Greenway Master Plan would have a **less than significant** impact on groundwater supply and recharge.

Flood Hazard Reduction Project

The FHR Project would not add impervious surfaces above existing conditions and thereby reduce the potential for groundwater recharge in the three project areas. The only impervious surface to be constructed is in the Central Reach. A component of the Central Reach project would remove a 1.5-acre asphalt parking lot and replace it with a 0.8-acre asphalt parking lot, for a reduction of 0.7 acres of impervious asphalt area. Completion of the Central Reach project would reduce the amount of impervious surfaces which currently exist in that reach, thereby increasing the potential for groundwater recharge.

The FHR Project would not require the use of groundwater. Therefore, the project would have no effect on groundwater supply.

The proposed FHR Project is considered have a **less than significant** impact on groundwater supply and recharge.

Mitigation Measures

None required.

Increased Stormwater Runoff/Altered Drainage Patterns (Standards of Significance 3, 4, and 5)

Impact 3.8.3 The proposed project would increase stormwater runoff and alter drainage patterns on the project site. However, the project proposes a drainage system to effectively manage drainage on the site to prevent erosion/sedimentation and localized flooding. This impact would be **less than significant.**

Greenway Master Plan

The Greenway Master Plan involves future improvements to 46 reaches. While the specificity of each of these improvements is unknown at this time, it is assumed that at least some of the improvements would result in changes to the existing drainage. However, these changes would be designed to provide better drainage and decrease the potential for flooding to the surrounding areas.

Additionally, the vast majority of improvements would be designed to promote the natural environment, such as removing existing buildings and hardscapes. Removal of these types of uses reduces stormwater runoff potential. However, implementation of the improvements in the Master Plan would include development of trails, roadways, and restroom facilities, which could increase stormwater runoff. While these improvements may increase the runoff potential in those particular areas, overall the Master Plan provides for an improved natural drainage system. This not only cumulatively contributes to reducing peak flows downstream, it also yields water quality and fish and wildlife benefits.

The following Master Plan objectives and action items assist in the reduction of stormwater runoff impacts and impacts resulting from an altered drainage pattern.

Objective 2: To provide main channel re-routes along Yreka Creek at selected locations to increase channel meanders where the existing channel is too straight, and where enough stream corridor width is available to accommodate re-routes. The re-routed channels should correspond to stable channel geometry determined by the geomorphology study.

Action Item 1: Install bypasses and offset levees to reduce potential flooding

Action Item 2: Lower the adjacent land on one or both sides of the channel to create a wider and more easily-accessible floodplain near the level of the down-cut stream and result in a lower flood height and extent, and potential containment of large floods entirely within the new floodway.

Action Item 4: Utilize the material generated by excavation to construct adjacent building pads that further elevate future development above the 100-year flood zone.

Action Item 7: Utilize large and small retention basins.

Action Item 14: Keep runoff from smaller storm events at the ground surface where it can move through bioswales, small retention basins, and natural ephemeral drainages before entering Yreka Creek.

Action Item 25: The use of wet meadows around ponds, in several large open areas along Upper Greenhorn Creek, and in the bottoms of attenuation basins and bioswales shall be implemented, if feasible. Plant species found in the existing wet meadows in the city and along existing streams shall be used in constructed wet meadows.

Action Item 26: Natural detention/retention features such as snags and logs shall be used where they do not pose a threat to bridges and culverts, if feasible.

Compliance with these objectives and action items would reduce potential runoff and drainage impacts. As such, these impacts are **less than significant.**

Flood Hazard Reduction Project

The FHR Project involves approximately 1.3 miles of Yreka Creek. As shown in the tables in Section 2.0, Project Description, the FHR Project proposes to relocate approximately 479,000 cubic yards of soil, create 1,455 linear feet of creek channel, create 5,314 linear feet of overflow channels, and convert 1,339 linear feet of existing creek to overflow channels. All of this will affect existing drainage patterns on the three reach sites. While the project would alter drainage patterns, the FHR Project would not increase the potential for flooding because of the alteration of the drainage pattern. Completion of the improvements in the Central, North, and South reaches would decrease the floodplain in those areas and therefore decrease, not increase, the potential for flooding. These changes are designed to allow for better stream flow during a storm event, provide better site drainage, and provide for better water quality flowing to Yreka Creek.

The FHR Project does not include any construction that would increase stormwater runoff potential. None of the proposed improvements include the use of impervious surfaces except the parking lot replacement of the Central Reach that results in an overall reduction in impervious surface.

Development of the FHR Project would not increase the runoff potential or alter drainage patterns in such a way to become detrimental to the natural environment. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

Flooding Hazards (Standards of Significance 7 and 8)

Impact 3.8.4 The majority of the proposed project is within the 100-year flood zone. However, the proposed improvements are designed to reduce flooding in the city. This impact would be **less than significant.**

Greenway Master Plan

As shown in **Figure 3.8-2,** a portion of Yreka is within a 100-year floodplain. Implementation of the Greenway Master Plan would benefit properties affected by the periodic flooding by reducing the potential for flooding to those properties. One of the main goals of the Master Plan is to "Reduce flood hazards throughout the city by containing floodwaters Greenway corridors to the extent possible" (Yreka 2016, p. 3).

As a part of Greenway Master Plan development, a hydrological report was completed to determine how the 100-year floodplain would be affected by developing the improvements identified in the Master Plan. This report determined that the 100-year floodplain would be reduced significantly using non-structural methods as identified in the Master Plan (Hydmet Consulting 2016, p. 60). The design approach for non-structural flood hazard reduction emphasized restoration of floodplains by grading, excavation, fill, and removal of structures

impeding flood passage. Some improved and new road crossings (bridges) may be required to convey overbank flood flows consistently downstream (Hydmet Consulting 2016, p. 51).

The following goals, objectives, and action items of the Greenway Master Plan would assist in the reduction of potential flooding impacts:

Goal 1: Removing properties from the 100-year flood zone through methods and improvements recommended in this Plan.

Goal 2: Result in Federal Emergency Management Agency flood map revisions once the flood reduction components of the Plan are completed.

Objective 1: To Increase floodway capacity and stormwater attenuation

Objective 2: To provide main channel re-routes along Yreka Creek at selected locations to increase channel meanders where the existing channel is too straight, and where enough stream corridor width is available to accommodate re-routes. The re-routed channels should correspond to stable channel geometry determined by the geomorphology study.

Action Item 1: Install bypasses and offset levees to reduce potential flooding

Action Item 2: Lower the adjacent land on one or both sides of the channel to create a wider and more easily-accessible floodplain near the level of the down-cut stream and result in a lower flood height and extent, and potential containment of large floods entirely within the new floodway.

Action Item 3: Use localized bank armoring where necessary.

Action Item 4: Utilize the material generated by excavation to construct adjacent building pads that further elevate future development above the 100-year flood zone.

Action Item 5: Retrofit existing bridges and other road crossings over streams to increase flood passage and facilitate trail locations in close proximity to the creek wherever possible.

Action Item 6: Removal and replacement of existing crossings, installation of additional crossings next to existing crossings, or permanent removal of existing crossings where they are no longer needed. Types of new and added crossings may include clear-span bridges, multi-span bridges, arch culverts, and box culverts.

Action Item 7: Utilize large and small retention basins.

Action Item 8: Retrofit the existing spillway at Greenhorn Dam to more easily facilitate reservoir lowering between storm events and for future fish passage.

Action Item 9: Install a large bypass culvert, in combination with a retention basin, at Humbug Hollow just upstream from dense development to intercept large flows and divert them to Yreka Creek.

Action Item 10: While the twin box culverts where Greenhorn Creek goes under Main Street and Interstate 5 are large enough to carry flows, install a low retaining wall on the north and east sides of the approach to the inlets to function as an offset levee.

Action Item 11: At the I-5 bridge over Yreka Creek north of Oberlin Road augment the existing sound berm just north of the bridge to function as a small offset levee.

Action Item 12: At the Waiiaka mobile home and RV park along Sharps Road, implement a modest augmentation of existing low offset levees around the facility to further reduce flood height.

Action Item 13: Use, if possible, the technique of installing powdered Portland cement during dry conditions and mixing it into the substrate as a potential means of speeding up the restoration of perennial flows.

The improved 100-year floodplain for the Greenway Master Plan area is shown in **Figure 3.8-4a** through **Figure 3.8-4c.** As shown, the 100-year floodplain is reduced substantially by the improvements proposed in the Master Plan. These improvements, as well as the implementation of the goals, objectives, and action items listed above, would result in a **less than significant** impact regarding flooding.

Flood Hazard Reduction Project

The motive for the FHR Project, as indicated by the project's title, is to decrease the potential flooding hazards in Yreka. The three individual projects of the FHR Project are specifically to reduce the 100-year floodplain within those reaches. This, in combination with future projects, will eventually protect the entire city from a 100-year flood event in the Yreka Creek watershed.

Figures 3.8-4a, 3.8-4b, and **3.8-4c** illustrate the reduction in the 100-year floodplain with the completion of the three project reaches. The figures show that the width of the floodplain is decreased substantially by construction of the project through the widening/lowering of the existing floodplain and relocating the soil, thereby raising other areas out of the floodplain. Additionally, part of the proposed project relocates one existing building out of the floodplain.

As discussed in Section 2.0, Project Description, improvements to the Central Reach would result in the widening/lowering of 4.4 acres of floodplain area affecting 0.2 miles of Yreka Creek. Two areas of the existing creek bed in the Central Reach will be realigned to improve sinuosity. The existing floodplain will be lowered approximately 8 to 10 feet to create a new readily accessible floodplain about 2 feet above the elevation of the stream channel (termed bankfull height).

The North Reach project area is approximately 0.5 mile in length. It starts at the E. Lennox Street Bridge and runs north to the northern border of the firefighter training area. The North Reach project area is approximately 25 acres in size and would involve the creation of 0.3 mile of major drainage swales and 15 acres of greenway. As with the Central Reach, the improvements to the floodway for the North Reach would be accomplished through widening the creek channel, lowering the existing area adjacent to the creek, and providing overflow channels. Improvements in this reach would reduce the 100-year flood width by 50 percent just downstream from the mouth of Little Humbug Creek. The 100-year flood height would be reduced by approximately 3.1 feet on average.

The South Reach project of Yreka Creek is approximately 0.6 mile in length. It starts on Sharps Road and follows the creek north to Oberlin Road where it connects to the Oberlin-Young Reach. The South Reach project area is the largest of the three projects and is approximately 70 acres. Improvements in the South Reach would result in a 100-year flood height reduction of approximately 3.4 feet on average, with the 100-year flood width reduced by 50 to 80 percent. Improvements in the South Reach would remove the Waiiaka RV/Mobile Home Park and the Tehama County Fairgrounds buildings from the 100-year flood zone.

In addition, the reduction in flood height and velocity will improve water quality and riparian habitat, which will benefit fish habitat. Channel rerouting will also improve fish habitat, since this will improve and stabilize stream geomorphology. Instream structures, including boulder structures and large woody debris, may also be included in the creek for fish habitat and channel stability.

The proposed Flood Hazard Reduction Project does not propose the construction of buildings within the 100-year floodplain and reduces the floodplain size. The FHR Project would not result in the construction of new housing or buildings in the flood zone nor expose people or structures to a significant risk of loss, injury, or death as a result of flooding. The FHR Project is designed to improve the current potential flooding impacts in the city. As such, this impact is considered **less than significant**.

Mitigation Measures

None required.

Dam or Levee Failure Inundation (Standard of Significance 9)

Impact 3.8.5 The proposed project site is within the Greenhorn Dam inundation area. Failure of the dam could result in inundation of portions of the project site. This impact is **less than significant.**

Greenway Master Plan

The Greenway Master Plan area is subject to potential flooding impacts as a result of a catastrophic failure of Greenhorn Dam. Greenhorn Dam Reservoir was built in 1960, has a capacity of 251 acre-feet of water, and covers about 25 acres. The height of the dam is approximately 35 feet (DSOD 2015).

According to the Yreka General Plan (2003, p. 6-2), "Greenhorn Dam Reservoir poses no real threat to Yreka. Even though it is a Class C earthfill dam, a breakage by any means would result in seepage rather than a complete collapse. The dam impounds a limited quantity of water, and Yreka Creek could accommodate the flow. The dams on the Klamath River do not pose a threat to Yreka, as they are over 20 miles away with intervening topography."

Additionally, all dams greater than 25 feet in height and with a capacity of 50 acre-feet or more, which includes Greenhorn Dam, come under the jurisdiction of the Division of Safety of Dams (DSOD), a division of the California Department of Water Resources. The DSOD has several programs that ensure dam safety both pre- and post-construction. Following construction of a dam, the DSOD inspects each dam on an annual basis to ensure the dam is safe, is performing as intended, and is not developing problems. Roughly a third of these inspections include in-depth

instrumentation reviews of the dam surveillance network data. The DSOD periodically reviews the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

Annual inspection of Greenhorn Dam and the fact that no buildings are proposed within an identified dam inundation area would result in a **less than significant** impact with respect to the exposure of people and structures to inundation as a result of the failure of this dam.

Flood Hazard Reduction Project

The proposed FHR Project would not be adversely affected in the event of a dam failure. The project is designed to improve the existing flooding conditions in Yreka and remove existing buildings from the floodplain in the three reaches. While this floodplain does not necessarily take into account the potential flooding levels as a result of dam failure, the project does not propose the construction of buildings in an identified dam inundation area.

Greenhorn Dam is under the jurisdiction of the DSOD, which has several programs that ensure dam safety both pre- and post-construction. Following construction of a dam, the DSOD inspects each dam on an annual basis to ensure the dam is safe, is performing as intended, and is not developing problems. Roughly a third of these inspections include in-depth instrumentation reviews of the dam surveillance network data. The DSOD periodically reviews the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

Annual inspection of Greenhorn Dam and the fact that no buildings are proposed within an identified dam inundation area would result in a **less than significant** impact with respect to the exposure of people and structures to inundation as a result of the failure of this dam.

Mitigation Measures

None required.

Tsunami and/or Seiche (Standard of Significance 10)

Impact 3.8.6 The project site is not located in an area that is affected by seiches or tsunamis. There is **no impact.**

A tsunami is an ocean wave caused by an underwater earthquake, landslide, or volcanic eruption. A seiche is a rhythmic motion of water in a partially or completely landlocked water body caused by landslides, earthquake-induced ground accelerations, or ground offset.

Greenway Master Plan

The Greenhorn Master Plan area is not located near an ocean, so it is not possible for a tsunami to impact the project. While Greenhorn Reservoir is located in the Greenhorn Master Plan area, the reservoir is located in an area of little seismic activity, as discussed in Section 3.6, Geology and Soils. Therefore, the potential for a seiche on Greenhorn Reservoir caused by seismic activity is remote. Additionally, while the potential for seiche waves on Greenhorn Reservoir caused by a

landslide is possible, these waves would not affect the Central, North, or South reaches, as they are not adjacent to or near the reservoir. There is **no impact.**

Flood Hazard Reduction Project

The three Flood Hazard Reduction Project sites are not located near an ocean, so it is not possible for a tsunami to impact the project. While Greenhorn Reservoir is located upstream of the three project sites, the reservoir is located in an area of little seismic activity, as discussed in Section 3.6. Therefore, the potential for a seiche on Greenhorn Reservoir caused by seismic activity is remote. Additionally, while the potential for seiche waves on Greenhorn Reservoir caused by a landslide is possible, these waves would not affect the Central, North, or South reaches, as they are not adjacent to or near the reservoir. There is **no impact.**

Mitigation Measures

None required.

Mudslides, Mudflow Inundation (Standard of Significance 10)

Impact 3.8.7 The proposed project site is located in an area with a variety of elevation changes. With the elevation gains in some areas of the proposed project, the possibility of improvements in an area with steep slopes would exist and therefore the potential for mudslides or mudflow also exists. However, this potential is considered **less than significant**.

Mudslides, also known as debris flows or mudflows, are a common type of fast-moving landslide that tends to flow in channels. Landslides occur when masses of rock, earth, or debris move down a slope. Mudslides develop when water rapidly collects in the ground and results in a surge of water-soaked rock, earth, and debris. Mudslides usually begin on steep slopes and can be triggered by natural disasters. Landslides are caused by disturbances in the natural stability of a slope. They can happen after heavy rains, droughts, earthquakes, or volcanic eruptions. Landslide activity is a function of slope, soil type and depth, soil moisture, bedrock, and seismic activities.

Greenway Master Plan

While the majority of the Greenway Master Plan is located in areas of little slope, some of the future projects n the Master Plan area would be located in areas with relatively steep slopes such as the upper reaches of Greenhorn Creek. However, any mudslides that result from improvements to these areas would flow downhill into the creek or the widened Greenway areas. Additionally, no buildings would be located in these areas. Further, the replanting of vegetation for areas disturbed during construction would reduce the potential for mudslides or mudflows, as the plants' root systems add stability to a slope and are a natural deterrent for this type of hazard. The potential for a mudflow or mudslide to damage structures or harm people within the Master Plan area sites is remote. Therefore, this would be a **less than significant** impact.

Flood Hazard Reduction Project

The Central, North, and South reaches are located in an area with relatively little elevation gain. While creek bank improvements would create a slope of approximately 6 to 10 feet in height

adjacent to the creek, as discussed in Section 2.0, Project Description, any mudslides in these areas would flow into the creek and be small due to the relative lack of height. Additionally, no buildings would be located in these areas. Further, the replanting of vegetation along the creek banks, which is a component of the FHR Project, would reduce the potential for mudslides or mudflows, as the plants' root systems add stability to a slope and are a natural deterrent for this type of hazard. The potential for a mudflow or mudslide to damage structures or harm people in the FHR Project sites is remote. Therefore, this would be a **less than significant** impact.

Mitigation Measures

None required.

3.8.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for hydrology and water quality is the Yreka Creek subwatershed, which has a drainage area of 33,453 acres and about 105 miles of active stream channel. Yreka is within the Yreka Creek subwatershed that drains to the Shasta River. The subwatershed was subdivided into 7 drainages and 66 subdrainages (GeoServ 2016b, p.10). The main channels of Yreka Creek and tributaries were also named for planning purposes. Seven watersheds drain to the creek: Upper Yreka Creek, Middle Yreka Creek, Lower Yreka Creek, Greenhorn Creek, Upper Humbug Creek, Lower Humbug Creek, and Juniper Creek (see **Figure 3.8-2**).

Cumulative Water Quality, Runoff, and Flooding Impacts

Impact 3.8.8 The proposed project, in combination with existing, approved, proposed, and reasonably foreseeable development in the Yreka Creek watershed, would alter drainage conditions, rates, volumes, and water quality, which could result in potential flooding and stormwater quality impacts within the overall watershed. This is considered a **less than cumulatively considerable** impact.

All existing, approved, proposed, and reasonably foreseeable development in the Yreka Creek watershed would alter drainage conditions, rates, volumes, and water quality, which could result in potential flooding and stormwater quality impacts in the overall hydrologic region. However, as discussed in Impacts 3.8.1 through 3.8.5 above, the proposed Greenway Master Plan and Flood Hazard Reduction Project are designed to reduce flooding impacts and water quality impacts. In fact, completion of the various improvements identified in the Master Plan and FHR Project would reduce the proposed project's contributions to cumulative runoff, water quality, and flooding impacts to other development in the Yreka Creek subwatershed. Furthermore, compliance with state regulations as identified above would effectively provide mitigation against the project's construction impacts. The proposed site design and existing regulations would render the project non-contributory to cumulative hydrology and water quality impacts. As such, the proposed project's contribution to cumulative water quality, runoff, and flooding impacts is considered to be **less than cumulatively considerable.**

Mitigation Measures

None required.

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3.9 Effects Found Not to be Significant

In the course of this evaluation, certain impact areas were found to have a less than significant impact or no impact because the type and location of the proposed project would not create such impacts. This section provides a brief description of effects found to have no impact. Note that a number of impacts found to have no impact or a less than significant are addressed in the various Draft EIR topical sections (Sections 3.1 through 3.9) to provide more comprehensive discussion as to why impacts are less than significant, in order to better inform decision-makers and the general public.

3.9.1 AGRICULTURAL AND FOREST RESOURCES

The entirety of the proposed project is not located in any areas identified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance by the California Department of Conservation (DOC) (2015a). The DOC also shows that the project site and all surrounding adjacent lands are not under Williamson Act contracts (DOC 2015b).

Additionally, development of the proposed project would not result in the conversion of farmland to a non-farmland use. The conversion of farmland is generally attributed to the development of residential units next to an operating farm, which may result in conflicts between the residential uses and agricultural uses or the extension of utility lines which would allow further development of adjacent lands. The project does not propose any residential uses or the extension of any utilities that might result in the conversion of agricultural or forest lands. Therefore, the proposed project would not impact any agricultural resources in the area. No impacts would occur.

3.9.2 LAND USE

The proposed project does not result in development that would be inconsistent with the City's General Plan or Zoning Ordinance or any habitat conservation plans or natural community conservation plans. The Flood Hazard Reduction Project does not result in any construction not allowed in the floodway area. There would be no impact to land use.

3.9.3 MINERAL RESOURCES

The Yreka General Plan indicates that no mineral resources zones are designated within the boundaries of the Yreka Planning Area (Yreka 2003, p. 1-5). The State Mining and Geology Board has the responsibility to inventory and classify mineral resources and could designate such mineral resources as having a statewide or regional significance. If this designation occurs, the local agency must adopt a management plan for such identified resources. At this time, there are no plans to assess local mineral resources for the project area or for Siskiyou County. Therefore, no impacts would occur to mineral resources.

3.9.4 NOISE

Development of the Flood Hazard Reduction Project will result in short-term construction noise. However, Policy 9 of the City of Yreka General Plan Noise Element exempts construction activities from City noise standards because construction noise is temporary. In addition, Noise Element Policy 10 limits construction activities to the hours between 7 a.m. and 5 p.m. For these reasons, short-term noise levels related to construction of the proposed project would be less than significant.

Once completed, noise levels from the Greenway Master Plan area are not expected to increase beyond existing conditions because the plan is a continuation of an existing use. Therefore, noise impacts associated with construction and operation of the proposed project would be less than significant.

3.9.5 POPULATION AND HOUSING

The proposed project would not result in the removal of houses, although a few may need to be relocated. The Flood Hazard Reduction Project may increase employment opportunities in the city; however, this employment will be for a relatively short time period during construction and is not expected to result in an increase in the city's population. Therefore, the project would have no impact on population and housing.

3.9.6 PUBLIC SERVICES

The 2016 Greenway Master Plan and the development of the Flood Hazard Reduction Project would not require the expansion or new construction of fire, police, parks and recreation, or school services or facilities.

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of service are generally based on a service-to-population ratio, except for fire protection, which is usually based on response time.

The Greenway Master Plan does not increase the need for additional public services facilities, as it does not propose any actual development projects. A master plan may increase the potential for development, which as a result increases the need for additional public services. In this case, however, the Greenway Master Plan does not result in additional commercial, residential, or industrial development that would then need to be served by public services.

The Flood Hazard Reduction Project would also not result in any new residential, commercial, or industrial FHR Project would not result in the need for additional police or fire services to the area because this area is currently served by the City's police and fire departments and no expanded or new police or fire facilities would be required to service the project. Also, the FHR Project would not result in the need for additional parks and recreation facilities or school facilities because development of this project would not result in an increase in residents or students.

Therefore, the Greenway Master Plan and the Flood Hazard Reduction Project would have no impact to police, fire, parks and recreation, or school facilities.

3.9.7 TRANSPORTATION AND CIRCULATION

The Greenway Master Plan does not impact transportation and circulation in the city, as it does not generate any traffic. The Flood Hazard Reduction Project may have temporary traffic impacts during construction due to construction vehicles, street closures, and construction adjacent to the street resulting in traffic rerouting. However, these traffic impacts are considered short term and would not result in a long-term decrease in the level of service on the surrounding streets. All projects are required to follow City regulations for street encroachments. Once completed, the proposed project would have no impacts on traffic and circulation. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor.

3.9.8 OTHER UTILITIES

The proposed project may result in temporary impacts to public utilities such as moving electrical lines, water lines, etc. However, these impacts are only temporary and would not result in new or expanded facilities beyond the area of construction. No additional demand for water, sewer, storm drainage, or electrical service would be required with completion of the Flood Hazard Reduction Project. Additionally, the project would not result in the reduction of groundwater or a reduction in groundwater recharge area. In fact, completion of the project may increase groundwater recharge as it will remove impervious areas such as the buildings in the Klamath National Forest (KNF) area of the Central Reach, as well as provide for biofiltration of urban contaminants.

Development of the FHR Project may add additional construction waste to the solid waste stream in the city. Solid waste from the project site will be transported to the transfer station south of Yreka off Oberlin Road and subsequently disposed of at the Anderson Solid Waste Landfill in Shasta County consistent with the solid waste disposal process for the entirety of the city. Under existing state permits, the landfill may accept 1,850 tons of solid waste per day until the year 2055.

Some solid waste may be produced during construction; however, trails and open space are generally not known to be large producers of solid waste. All construction waste is required to comply with the California Building Code requirements diverting a minimum of 50 percent of waste from the landfill.

The addition of solid waste to the landfill resulting from the project would not increase the tonnage beyond the landfill's permitted amount or result in the closure of the landfill prior to the anticipated 2055 date. As a result, the proposed project would have a less than significant impact to solid waste disposal.

REFERENCES

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4.0 – Project Alternatives

4.1 INTRODUCTION

GENERAL CEQA REQUIREMENTS

California Environmental Quality Act (CEQA) Guidelines Section 15126.6(a) states, "an EIR shall 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." The EIR need not consider every conceivable alternative, but rather should consider a "reasonable range" of potentially feasible alternatives that foster informed decision-making and public participation. The range of potential alternatives to the proposed project is to include those alternatives that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (CEQA Guidelines Section 15126.6(c)).

PROJECT OBJECTIVES

As described in Section 2.0, Project Description, the project objectives are:

1) Reduce flood hazards throughout the city by containing floodwaters within greenway corridors to the greatest extent feasible.

2) Reduce water quality impacts from urban runoff entering Yreka Creek and its tributaries.

3) Restore and protect fish and wildlife habitat, and more effectively integrate this habitat into the urban landscape.

4) Provide a network of trails and related facilities for non-motorized transportation connectivity, recreation, exercise, tourism, emergency access, and related overall economic vitality.

5) Incorporate interpretive and educational opportunities.

6) Reduce use of stream corridors by transients in order to improve security, reduce litter and sanitary problems, and reduce impacts on adjacent businesses and residences.

SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS

The analysis presented in the technical sections of this DEIR (Sections 3.1 through 3.9) determined that implementation of the proposed project would not result in any significant and unavoidable impacts.

ALTERNATIVES CONSIDERED BUT REJECTED

CEQA Guidelines Section 15126.6(c) states that an EIR should identify any alternatives that were considered but rejected as infeasible by the lead agency during the scoping process, and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are

(1) failure to meet most of the stated project objectives, (2) infeasibility, and (3) inability to avoid significant environmental impacts. The alternatives discussed below were considered but rejected from further analysis in the EIR.

Off-Site Alternative

Off-site alternatives are generally evaluated in an environmental document to avoid, lessen, or eliminate the significant impacts of a project by considering the proposed development in an entirely different location. To be feasible, development of off-site locations must be able to fulfill the project purpose and meet most of the project's basic objectives. Given the nature of the proposed project (adoption of the Greenway Master Plan for the Yreka Creek corridor), it is not possible to consider an off-site alternative, as the Master Plan has been specifically established to improve the Yreka Creek corridor. For this reason, an off-site alternative is considered infeasible pursuant to State CEQA Guidelines Section 15126.6(c) and has been rejected as a feasible project alternative.

Removal of Existing Structures

The alternative would remove all existing structures within the 100-year floodplain and allow for the revegetation of the floodplain. As shown in **Table 2.0-1**, this would result in the removal of 22 homes or main buildings, 41 outbuildings, and 75 small sheds. Additionally, it would affect 93 commercial property owners, 299 residential property owners, and 7 public facility owners. This alternative is considered infeasible based on the financial impacts and the loss of private and public buildable land. In addition, this alternative would not meet any of the project's objectives. As such, this alternative has been rejected as a feasible project alternative.

Major Flood Retention/Detention Basins

Construction of major retention and/or detention basins upstream of the city was considered as a potential alternative to the proposed project. This would involve the creation of large retention and/or detention basin areas on Yreka Creek, Juniper Creek, Little Humbug Creek, and Greenhorn Creek that would reduce flows to the Yreka Creek watershed in the event of a 100-year storm. While this alternative would achieve one of the proposed project's primary objectives, that of reducing flood hazards throughout the city, it would not meet any of the remaining five objectives. Therefore, this alternative has been rejected, as it does not meet the majority of project objectives.

Flood Hazard Reduction Projects Only

This alternative would only complete the improvements identified as part of the Flood Hazard Reduction (FHR) Project to the Central, North, and South reaches as discussed in Section 2.0. All other future improvements in the 2016 Greenway Master Plan would not be accomplished. Nor would the Master Plan be updated. Completion of the improvements within the FHR Project would reduce the potential for flooding impacts in those areas as well as reduce the water quality impacts coming from these areas. While this approach would decrease the flooding impacts within these three reaches, it would not remove the potential for flooding in the remaining reaches of the Greenway Master Plan area. Nor would completion of only the FHR Project reduce water quality impacts to the rest of the Yreka Creek corridor or restore the fish habitat in the entire creek as it passes through Yreka. This alterative would result in a patchwork

approach that would not met any of the overall objectives of the proposed project. Therefore, this alternative has been rejected.

4.2 PROJECT ALTERNATIVES ANALYZED IN THE DEIR

DESCRIPTION OF PROJECT ALTERNATIVES

Three alternatives to the proposed project are analyzed in this EIR, as described below. As discussed above, the proposed project would not result in any significant and unavoidable impacts. Therefore, the alternatives below include the no project alternative, one alternative that would reduce air pollution and greenhouse gas emissions, and one alternative that would remove the potential for flooding in the city.

Alternative 1: No Project Alternative – 2005 Greenway Master Plan

CEQA Guidelines Section 15126.6(e)(1) states that a No Project Alternative must be analyzed in every EIR. In the case where the project is a revision of an existing land use or regulatory plan, policy, or ongoing operation, such as the proposed 2016 Greenway Master Plan, the "no project" alternative will be the continuation of the existing plan, policy, or operation into the future, in this case, the 2005 Greenway Master Plan. The comparison is that of the proposed project versus what can reasonably be expected to occur within the Master Plan area should the 2016 Greenway Master Plan and FHR Project not be approved. The analysis allows decision-makers to compare the impacts of approving the project with the impacts of not approving the project (CEQA Guidelines Section 15126.6(e)(3)(A)).

For this alternative analysis, the Greenway Master Plan would remain in its current condition. No proposed improvements identified in the 2016 Master Plan would occur. A comparison of the 2005 Master Plan area (see **Figure 4.0-1**) and the 2016 Master Plan area (**Figure 2.0-4**) shows the increase in the 2016 Master Plan area, including the area above Greenhorn Reservoir and the areas around Evergreen Elementary School, Jackson Street Elementary School, and Yreka High School. Additionally, the 2016 Master Plan increases the actual project areas all along Greenhorn and Yreka creeks, mainly to provide additional flood control improvements along the creeks.

Additionally, while the 2016 Master Plan provides design recommendations for flood hazard reduction, water quality improvements, fish and wildlife habitat restoration, and trails and other recreational improvements, the 2005 Master Plan's main focus is on trail development along Yreka and Greenhorn creeks. The 2005 Master Plan discusses fisheries and creek corridor improvements, but not to the extent of the 2016 Master Plan, which provides a much more intense analysis and recommended improvements in these areas.

Currently, the majority of the 2005 Master Plan area is within the 100-year flood zone. For the No Project Alternative, those flood improvement projects identified in the 2016 Greenway Master Plan would not occur. No floodway improvements, such as widening the creek channel, providing retention/detention basins, elevating the surrounding areas, moving buildings out of the flood zone, or expanding greenways, would occur with this alternative. The 100- and 500-year flood zones identified by the Federal Emergency Management Agency (FEMA) for the city would continue as they presently exist. Additionally, no improvements designed to promote fish and wildlife habitat would occur within the Yreka Creek corridor.

Additionally, for this alternative analysis, the FHR Project would not occur. The North, Central, and South reaches would remain in their current condition. No proposed improvements identified in the FHR Project would occur. As with the Master Plan, the majority of the FHR Project area is within the 100-year flood zone. Those flood improvement projects identified in the FHR Project would not occur. No widening of the floodplain, new drainage channels and/or swales, moving of buildings out of the flood zone, new retention basins, or expansion of greenways would occur with this alternative. The 100- and 500-year flood zones identified by FEMA for the three reaches would continue as they presently exist. However, the development of trails within these reaches would occur according to the 2005 Master Plan development schedule.

Alternative 2: Channelization of Yreka Creek

Channelization of creeks consists of straightening, deepening, widening, clearing, or lining existing creek channels. It is an engineering technique that has been used many times to control floods, improve drainage, control erosion, and improve navigation. Much of the Yreka Creek corridor, as it exists today, has been altered over time to allow development along the creek. These "improvements" consisted of raising the land adjacent to the creek, straightening the creek, and building retaining walls adjacent to the creek to provide for better flood control and in effect channelize the creek. Alternative 2 would continue this process by lowering the current creek bed, raising adjacent land, as necessary, and using retaining walls extensively all along Yreka Creek where it passes through the city. Alternative 2 would also remove existing vegetation adjacent to the creek and armor the creek bed and banks and sides with cement where it would then meet the retaining walls. This would be designed to reduce the potential for flooding in the city. Future development of creekside trails and recreation areas would not occur, as this area would primarily be used for flood control.

Alternative 3: Reduced Project

The Reduced Project Alternative would be the accomplishment of those improvements identified in **Table 2.0-1** for Yreka Creek and its 19 reaches only. Improvements to Juniper Creek, Greenhorn Creek, Little Humbug Creek, and the westside tributaries would not occur. Alternative 3 would result in improvements to 8.9 miles of stream corridor including 446 acres of greenway, 15.9 miles of trails, the installation of 10 trail bridges, and the removal of 11 homes and/or main buildings, as well as other attributes identified in **Table 2.0-1**. The Reduced Project Alternative would reduce the project area from 14.9 stream miles to 8.9 miles, 46 reaches to 19, and spoils acreage from 179 to 121 acres.

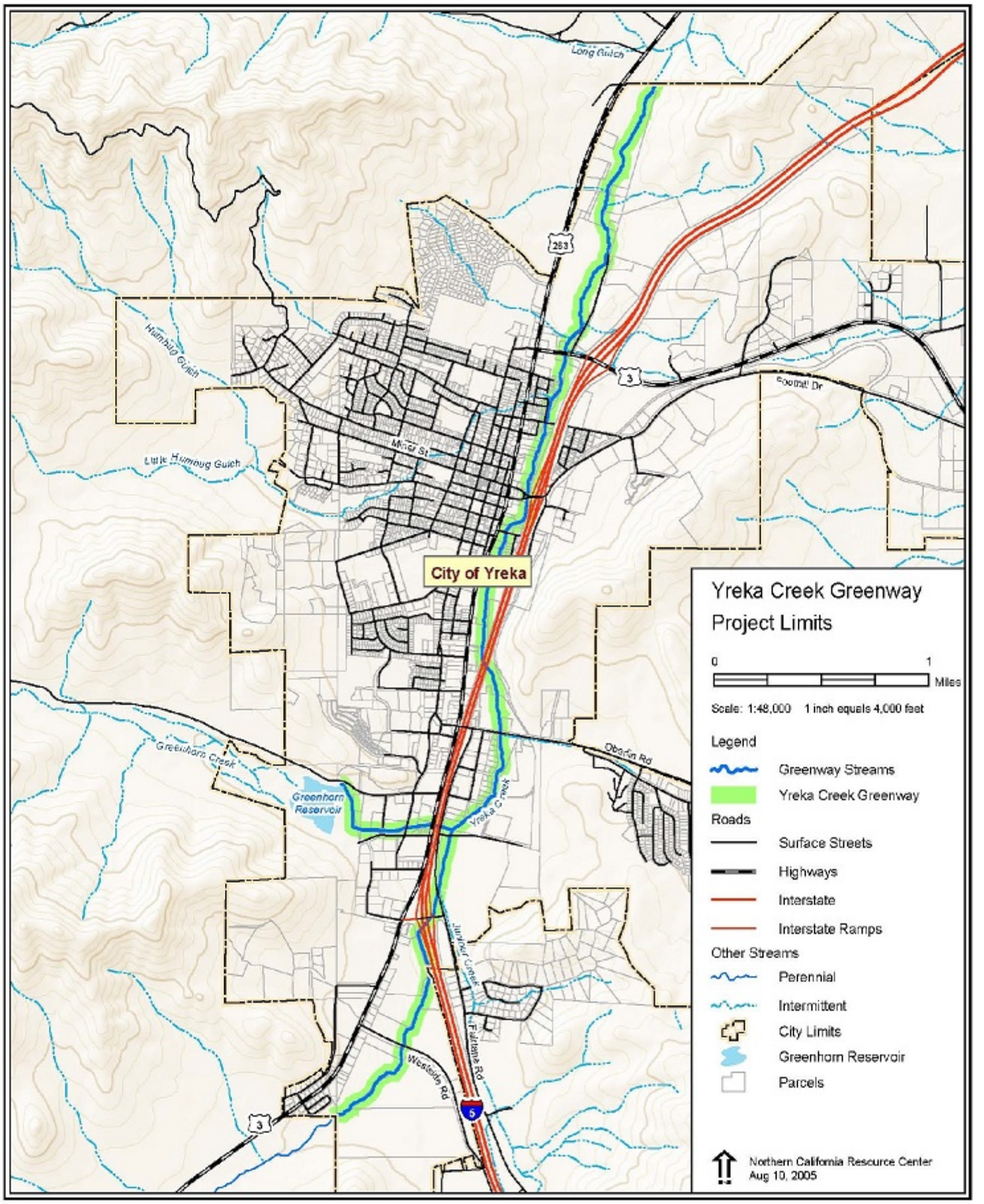

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FIGURE 4.0-1
2005 Master Plan Area

Michael Baker
INTERNATIONAL

4.3 COMPARATIVE IMPACT ANALYSIS

For each project alternative, the significant environmental impacts are identified, as well as the impacts of the proposed project that would be avoided. If an alternative would cause one or more significant effects in addition to those that would be caused by the proposed project, the significant effects of the alternative are discussed but in less detail than the significant effects of the proposed project (CEQA Guidelines Section 15126.6(d)). The discussion for each alternative addresses potential impacts on each of the environmental issues presented in Sections 3.1 through 3.9 of this DEIR. If a potential impact under an alternative is similar to that under the proposed project, the discussion will so note and no further analysis of the potential impact is conducted.

ALTERNATIVE 1 – NO PROJECT – 2005 GREENWAY MASTER PLAN

Under the No Project Alternative – 2005 Greenway Master Plan, improvements identified in the 2016 Greenway Master Plan or the FHR Project would not occur. The Yreka Creek corridor and its tributaries would be improved according to the goals and objectives of the 2005 Greenway Master Plan. As discussed previously, the 2005 Master Plan includes goals and objectives for the improvement of the creek's fish habitat. The 2005 Master Plan includes a list of various methods to improve the creek habitat such as:

a. Stream bank stabilization

    1. Planting of native vegetation on bare earth slopes.

    2. Reshaping vertical cut slopes to an angle of repose.

    3. Placement of log barriers.

    4. Placement of native stone boulders as riprap.

b. Streamside shading

    1. Planting of native trees, shrubs, and ground covers along the entire creek corridor.

    2. Planting of historical trees and shrubs in town.

    3. Instructing landowners on proper pruning techniques.

    4. Coordination with flood control experts on streamside vegetation planting and pruning.

c. In-stream habitat

    1. Placement of rock weirs and/or log barriers.

    2. Importation of spawning gravels.

    3. Cleaning of existing spawning gravels.

4. Creation of fish cover and rearing habitat.

5. Aeration of water.

6. Improvement of water quality, temperature, and quantity.

7. Placement of fish barriers at locations selected by the Department of Fish and Game in order to keep steelhead from migrating upstream into pastures and out of perennial waters. Possible locations include the Oberlin Road ditch, the south city limits, and along Juniper Creek.

8. Construction of sumps and/or catchment basins at outlets of storm drains to intercept gasoline, oil, and other hazardous wastes.

9. Construction of a fish ladder at Greenhorn Dam.

d. Corridor habitat

1. Creation of wildlife habitat, in conjunction with fish, for deer, wood ducks, mallards, Canada geese, teal, pheasants, skunks, raccoons, songbirds, and other riparian related species.

2. Creation of pleasant environments for humans.

3 Planting trees and shrubs to screen the nearby freeway, buildings, roads, and parking areas.

4. Creation of security and privacy measures for all landowners along the Greenway corridor, using California blackberries, chain link fencing with wood slats, etc.

Alternative 1 also includes guidance for educational/interpretive opportunities, recreation utilization, law enforcement and public safety, and land acquisition. However, the main focus in this alternative is the construction of trails through the Master Plan area. The No Project Alternative provides a description, design, and purpose for eight different trail segments and extends the length of Yreka Creek as it passes through the city and from Greenhorn Reservoir to Yreka Creek.

The main difference between the 2005 Greenway Master Plan and the 2016 Master Plan is the difference in size of the Master Plan area, the addition of policies and action items in the 2016 Master Plan, and the 2016 Master Plan's focus on flood reduction.

Alternative 1 includes Yreka Creek within the city limits and the area of Greenhorn Creek below Greenhorn Dam. The 2005 Master Plan does not include those areas identified in the 2016 Master Plan for Juniper Creek, Little Humbug Creek, Greenhorn Reservoir and Upper Greenhorn Creek, and the westside tributaries.

The 2016 Master Plan includes extensive discussion and guidance for the reduction of the 100-year floodplain. Specifics on flood reduction were not a part of the 2005 Greenway Master Plan. As such, for Alternative 1, impacts to the natural and built environments would occur in the

event of a 100- or 500-year flood, as Alternative 1 does not include programs, policies, or techniques to reduce flooding.

The 2016 Greenway Master Plan incorporates action items that are not used In Alternative 1. These action items enhance the ability of the Master Plan to require that proposed improvements be designed to provide for the best environmental protection and enhancement possible.

Aesthetics

Yreka Creek and Lower Greenhorn Creek have been drastically altered by agriculture, mining, and urbanization over the years. Mining was a predominant activity in and near the creek for approximately 100 years, which resulted in extensive dredger tailings in Yreka and Greenhorn creeks. Since the decline of mining activities on the creeks, commercial and residential development have filled, straightened, and channelized the natural alignment of the creek. A significant amount of the natural streamside environment, trees, shrubs, and riparian vegetation have been eliminated by the impacts of agricultural, mining, freeway construction, and urbanization.

Visually, Alternative 1 would result in a change to visual or scenic resources in the Yreka Creek corridor, providing formal trails along the creek similar to the proposed project. However, the 2016 Greenway Master Plan also provides for a trail system that is expanded to include areas above Greenhorn Reservoir and around Evergreen Elementary, Jackson Street Elementary, and Yreka High School. While the 2016 Master Plan includes greater detail regarding trail design and components than Alternative 1, the implementation of formal trails in an area that currently does not have these trails would result in a less than significant impact.

As discussed in Section 3.1, no scenic resources or scenic vistas would be impacted with implementation of the 2016 Greenway Master Plan or the FHR Project. While future improvements identified in the 2016 Greenway Master Plan would result in visual impacts during construction, the ultimate character of the finished improvements will be a greatly enhanced creek corridor, offer more open space and recreational opportunities, and add to the city's scenic views and visual character. Therefore, the proposed project would improve the creek corridor's current aesthetic condition and would be environmentally superior to Alternative 1.

Air Quality

None of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions; therefore, by their nature, all projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. The Master Plan and the FHR Project would generate construction-related air quality emissions. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur. Once construction activities are complete, air pollutant emissions cease. Implementation of identified mitigation measures would reduce the proposed project's construction-related air pollutant emissions to less than significant levels.

Alternative 1 would also have construction-related air quality emissions. However, because this alternative does not include mitigation measures to reduce air quality impacts, as are required

with this EIR, these impacts may not be mitigated to a less than significant level. All operational air quality emissions for Alternative 1 would be similar to the proposed project and would be less than significant. Due to the lack of mitigation measures during construction, Alternative 1 would have a greater impact to the environment than the proposed project with regard to air quality impacts.

Biological Resources

The 2016 Greenway Master Plan has a more comprehensive review of biological resources and establishes a mitigation strategy that will be used for future projects. Alternative 1 relies on piecemeal analysis, forcing each new project to establish its own mitigation. By including the entire project in the analysis, the proposed project can provide mitigation outside of individual projects if necessary and the reviewing agencies can review impacts in the context of the entire watershed. As a result, Alternative 1 impacts to biology would be greater than those of the proposed project.

Cultural Resources

No cultural resources were found on the FHR Project sites during the cultural resources survey completed for the project. Additionally, with implementation of Yreka General Plan programs and the mitigation measures identified in Section 3.4, the proposed project would result in a less than significant impact to cultural resources.

As with the proposed project, future projects of Alternative 1 would be required to comply with General Plan programs. General Plan Program LU.12.A requires an archaeological record search for discretionary projects in the city, and Program LU.12.B requires notification to the proper authorities if human remains are found during project construction. However, those mitigation measures identified in Section 3.4, which provide an additional level of protection to cultural resources, would not be implemented in Alternative 1. These mitigation measures are included in the EIR to reduce the proposed project's potential impacts to undiscovered cultural resources to a less than significant level. The future construction activities in Alternative 1 would not have the same level of cultural resources protection afforded with the implementation of the identified mitigation measures for the proposed project. As such, the potential for impact would be greater with Alternative 1 than the proposed project.

Greenhouse Gases and Climate Change

The proposed project would produce greenhouse gas (GHG) emissions during the construction of the various improvements identified in the Master Plan and the FHR Project. As shown in Section 3.5, 2016 Greenway Master Plan improvements are estimated to produce 3,007 metric tons of GHG emissions during construction activities. Additionally, the FHR Project improvements would produce 3,658 metric tons of GHG emissions during construction activities. As with air quality emissions, the Master Plan and the FHR Project would not produce any operational GHG emissions. While the Master Plan and the FHR Project would produce greenhouse gas emissions during construction activities, these emissions were determined through the GHG analysis to be a less than cumulatively considerable impact.

Alternative 1 would also result in an increase in GHG emissions. However, because of the smaller affected area of the 2005 Master Plan, GHG emissions would be less than with the proposed

project because less construction-related GHG emissions would occur. As with the proposed project, Alternative 1 would result in no operational impacts to GHG and climate change because none of the components of Alternative 1 would include the provision of new permanent stationary or mobile sources of emissions. Because of the smaller affected area during construction of Alternative 1 when compared to the proposed project, Alternative 1 would be environmentally superior to the proposed project when discussing GHG and climate change, as it would produce less GHG emissions. However, in discussing the impact thresholds, both the proposed project and Alternative 1 would be considered to have a less than significant impact on GHG and climate change, as neither project would surpass GHG threshold standards.

Geology and Soils

The proposed project would result in less than significant impacts with regard to seismic-related ground failure, such as liquefaction, settlement, fault rupture, and lateral spreading. Additionally, the proposed project would result in a less than significant impact when discussing expansive soils and erosion. No mitigation measures would be required to reduce any of these impact areas to a less than significant level.

Impacts related to seismic activity and expansive soils are all based on the location of a project. Because Alternative 1 is in the same area as the proposed project, although smaller in size, this alternative would have the same result in the potential for impacts due to seismic activity and expansive soils.

As with the proposed project, Alternative 1 would be required to comply with California Building Code (CBC) Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion. In addition, all future Alternative 1 projects would be required to prepare and comply with a stormwater pollution prevention plan (SWPPP). The SWPPP would require the implementation and maintenance of erosion control measures and a description of erosion control practices, including appropriate design details and a time schedule. The SWPPP would consider the full range of erosion control best management practices (BMPs), including any additional site-specific and seasonal conditions. As with the proposed project, compliance with CBC Chapter 70 standards and implementation of an approved SWPPP would minimize the potential for soil erosion for future projects of this alternative. As such, Alternative 1 is similar to the proposed project's erosion potential and would result in a less than significant impact.

Hazards and Hazardous Materials

The analysis in Section 3.7 of this EIR determined that based on the uses that would be part of the proposed project and the existing regulatory structure related to hazardous materials, the proposed project would not cause a threat to public safety during project construction or operation due to the release of hazardous materials. No hazardous materials release sites have been identified to be located in the proposed project area. No airports exist within 2 miles of the area. Portions of the proposed project are located in an area considered to be a high fire severity zone. However, the location of the proposed project makes it readily accessible by emergency personnel and vehicles in the event of a wildland fire. Any new proposed uses within the proposed project would be required to be reviewed by the Yreka Volunteer Fire Department and comply with all requirements for fire protection instituted by the department. As such, the proposed project would have a less than significant impact or no impact with regard to the

accidental release of hazardous materials, being located within a site which is included on a list of hazardous materials sites, being within an airport safety zone, or being located in an area prone to wildfire.

Because Alternative 1 is in the same location as the proposed project and would be obligated to comply with the regulatory requirements for hazardous materials, the alternative would have a similar level of impact with regard to public safety during project construction or operation due to the release of hazardous materials, hazardous materials release sites, airports, and wildfire.

Hydrology and Water Quality

The proposed project would have a less than significant impact to groundwater supply and recharge, dam inundation, and mudslides. Additionally, the proposed project would not be affected by a tsunami or seiche. Further, because of the goals, objectives, and action items identified in the 2016 Master Plan, which provide mitigation, the proposed project would have a less than significant impact with regard to water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards.

Because Alternative 1 is in the same location as the proposed project, impacts related to groundwater supply and recharge, dam inundation, and mudslides would be the same as the proposed project. However, the 2005 Master Plan does not have any goals, objectives, and action items for water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards. Without these goals, objectives, and action items, the potential for impacts to these areas would be greater than the proposed project. As such, Alternative 1 would be potentially inferior in the areas of water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards and worse than the proposed project.

Effects Found Not to Be Significant

As discussed in Section 3.9, the proposed project would have no impact to the areas of agricultural and forest resources, land use, mineral resources, noise, population and housing, public services, transportation and circulation, and other utilities.

Because Alternative 1 is located in the same general area as the proposed project, it would result in the same level of impact to agricultural and forest resources, land use, and mineral resources. Additionally, because Alternative 1 would have the same potential for population increase as the proposed project, that of no potential, impacts to population and housing, public services, and other utilities would be the same as the proposed project. Finally, this alternative would not result in an increase in traffic or require new roads, nor would it result in an increase in ambient noise. As such, Alternative 1 would have the same level of impact as the proposed project in the areas of noise and transportation and circulation.

Impact Summary

As discussed previously, Alternative 1 consists of the 2005 Greenway Master Plan. As with many planning documents, subsequent versions of a master plan is usually better than the previous plan. This is because of implementation of the original plan reveals the shortcomings of that

document. Environmentally, this is the case with the 2005 Master Plan and the 2016 Master Plan. Due to the specificity of improvements defined in the 2016 Master Plan and the goals, objectives, and action items in the 2016 Master Plan, as well as the mitigation measures identified in this EIR, the proposed project is a more environmentally friendly document than the 2005 Greenway Master Plan.

ALTERNATIVE 2: CHANNELIZATION OF YREKA CREEK

Alternative 2 would continue and expand the process of channelizing Yreka Creek. This would take place by lowering the current creek bed, raising the adjacent land, as necessary, and using retaining walls extensively all along Yreka Creek where it passes through the city. Alternative 2 would also require the clearing of the existing creek bed and bank of vegetation and lining the area with cement in order to provide for better water flow during a storm event. Future development of creekside trails and recreation areas would not occur within the Yreka Creek corridor. The modification of Yreka Creek would occur along the 5.2 miles of Yreka Creek as it passes through the city. Greenhorn Creek, Little Humbug Creek, and Juniper Creek would all remain as they currently exist. Channelization of Yreka Creek would be designed to eliminate the potential for flooding on the creek. This alternative would result in extensive changes to the natural environment.

Aesthetics

As stated previously, Yreka Creek and Lower Greenhorn Creek have been drastically altered by agriculture, mining, and urbanization over the years. A significant amount of the natural streamside environment, trees, shrubs, and riparian vegetation have been eliminated by the impacts of agricultural, mining, freeway construction, and urbanization.

As discussed in Section 3.1, no scenic resources or scenic vistas would be impacted with implementation of the 2016 Greenway Master Plan or the FHR Project. While future improvements identified in the 2016 Greenway Master Plan would result in visual impacts during construction, the ultimate character of the finished improvements will be a greatly enhanced creek corridor, offer more open space and recreational opportunities, and add to the city's scenic views and visual character.

Visually, Alternative 2 would result in an extensive change to visual or scenic resources in the Yreka Creek corridor. This alternative would result in a creek channel with cement sides and bottom. While this would limit the flooding potential, it would remove all the aesthetic qualities of the creek, turning it into a creek "canyon" with steep walls and no vegetation.

Because the proposed project would provide a more natural creek corridor than this alternative, the proposed project would be environmentally superior to Alternative 2 with regard to visual and aesthetic resources.

Air Quality

As stated in the previous section, none of the components of the proposed project would generate quantifiable criteria air quality emissions from long-term operations. Additionally the proposed project's construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur. Once construction activities are complete,

air pollutant emissions cease. Implementation of identified mitigation measures would reduce the proposed project's construction-related air pollutant emissions to less than significant levels.

Alternative 2 would also have air quality emissions during construction. However, considering the extensive construction that would be required for this alternative, whether or not the construction emissions could be mitigated to a less than significant level is unknown without a full analysis. All operational air quality emissions for this alternative would be similar to the proposed project, as Alternative 2 would not have source or mobile-related air quality emissions and would result in a less than significant impact. Because of the unknown nature of potential construction-related air quality impacts, Alternative 2 would have a greater impact with regard to air quality than the proposed project.

Biological Resources

One of the main benefits of the 2016 Greenway Master Plan is the improvement of riparian and fish habitat. Alternative 2 would continue channelization of the creek. This would have a devastating effect on riparian and fish habitat of the creek, as all natural areas within the creek and creekside areas would be removed. In addition, those water quality attributes which promote a healthier creek with the proposed project would not be implemented for Alternative 2, which would also affect fish. As such, Alternative 2 would have a greater impact with regard to biological resources than the proposed project.

Cultural Resources

With implementation of Yreka General Plan programs and mitigation measures identified in Section 3.4, the proposed project would result in a less than significant impact to cultural resources.

As with the proposed project, future projects of Alternative 2 would be required to comply with General Plan programs. General Plan Program LU.12.A requires an archaeological record search for discretionary projects in the city, and Program LU.12.B requires notification to the proper authorities if human remains are found during project construction. The mitigation measures identified in Section 3.4 are typical cultural resources mitigations included in initial studies or environmental impact reports. Because of the size and potential for environmental impact, and the fact that it would most likely be a discretionary project, Alternative 2 would be required to comply with CEQA and undergo environmental review. As those mitigation measures identified in Section 3.4 are standard mitigation for cultural resource impacts, Alternative 2 would also have these mitigations. As such, this alternative's potential for impacts to cultural resources would be similar to the proposed project and could be mitigated to a less than significant level.

Greenhouse Gases and Climate Change

The proposed project would produce GHG emissions during the construction of the various improvements identified in the 2016 Greenway Master Plan and the FHR Project. As with air quality emissions, the Master Plan and the FHR Project would not produce any operational GHG emissions. While the Master Plan and the FHR Project would produce greenhouse gas emissions during construction activities, these emissions were determined through the GHG analysis to be a less than cumulatively considerable impact.

Alternative 2 would also result in an increase in GHG emissions. In fact, this alternative's GHG emissions would be much greater than the proposed project's because of the greater amount of relocated soils, pouring of cement, and wall construction along a 5.2-mile stretch as well as the greater number of construction vehicles, all of which would result in the production of GHGs. Additionally, the removal of vegetation within the creek area without replacement would eliminate the potential for the biosequestration of greenhouse gases from the creekside vegetation.[1] As such, Alternative 2 would have a greater impact to climate change by producing a greater amount of GHGs when compared to the proposed project.

Geology and Soils

The proposed project would result in less than significant impacts with regard to seismic-related ground failure, such as liquefaction, settlement, fault rupture, and lateral spreading. Additionally, the proposed project would result in a less than significant impact when discussing expansive soils and erosion. No mitigation measures would be required to reduce any of these impact areas to a less than significant level.

Impacts related to seismic activity and expansive soils are all based on the location of a project. Because Alternative 2 is in the same area as the proposed project, this alternative would have the same result in the potential for impacts due to seismic activity and expansive soils.

As with the proposed project, Alternative 2 would be required to comply with CBC Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion. In addition, all future Alternative 2 projects would be required to prepare and comply with a stormwater pollution prevention plan. The SWPPP would require the implementation and maintenance of erosion control measures and a description of erosion control practices, including appropriate design details and a time schedule. The SWPPP would consider the full range of erosion control best management practices (BMPs), including any additional site-specific and seasonal conditions. As with the proposed project, compliance with CBC Chapter 70 standards and implementation of an approved SWPPP would minimize the potential for soil erosion for this alternative. As such, Alternative 2 is similar to the proposed project's erosion potential and would result in a less than significant impact.

Hazards and Hazardous Materials

The analysis in Section 3.7 of this EIR determined that based on the uses that would be part of the proposed project and the existing regulatory structure related to hazardous materials, the proposed project would not cause a threat to public safety during project construction or operation due to the release of hazardous materials or location in an area considered to be a high wildfire area.

Because Alternative 2 is in the same location as the proposed project and would be obligated to comply with the regulatory requirements for hazardous materials, this alternative would have a similar level of impact with regard to public safety during project construction or operation due to the release of hazardous materials, hazardous materials release sites, airports, and wildfire.

[1] Biosequestration refers to a category of biological processes that absorb carbon dioxide (CO_2), the primary GHG, from the atmosphere and contain it in living organic matter, soil, or aquatic ecosystems (C2ES 2016).

Hydrology and Water Quality

The proposed project would have a less than significant impact to groundwater supply and recharge, dam inundation, and mudslides. Additionally, the proposed project would not be affected by a tsunami or seiche. Further, because of the goals, objectives, and action items identified in the 2016 Master Plan, which provide mitigation, the proposed project would have a less than significant impact with regard to water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards.

The proposed project has a number of attributes built into the project which provide for improved water quality. These attributes improve water quality by reducing soil erosion by lowering peak flows and reducing hydraulic forces, increasing capture of fine sediment by spreading out high flows over restored floodplains, filtering out contaminants by flowing through vegetated floodplains, filtering additional contaminants by moving storm drain outfalls to the far edge of floodplains, and increasing groundwater recharge, thereby increasing base flows and lowering summertime stream temperatures.

Because Alternative 2 is in the same location as the proposed project, impacts concerned with dam inundation, tsunamis, seiches, and mudslides would be the same as the proposed project. Additionally, Alternative 2 would have a similar impact to stormwater runoff and water quality to the proposed project during construction because a SWPPP would be required during construction, as with the proposed project.

Alternative 2 would be designed to include water quality improvement attributes such as sediment traps and contaminant filters. However, the use of the vegetated floodplains to remove sediment and contaminants would not be possible with Alternative 2, as all adjacent land would be raised and therefore no floodplain would exist in this area. In addition, the use of man-made sediment traps and contaminant filters would require the periodic maintenance of these features. Using the natural floodplain as a sediment trap and contaminant filter would not require periodic maintenance. Additionally, lining the creek with cement would prohibit any groundwater recharge from the creek bed.

As such, Alternative 2 would be potentially inferior in the areas of water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards and worse than the proposed project.

Effects Found Not to Be Significant

As discussed in Section 3.9, the proposed project would have no impact to the areas of agricultural and forest resources, land use, mineral resources, noise, population and housing, public services, transportation and circulation, and other utilities.

Because Alternative 2 is located in the same area as the proposed project, it would result in the same level of impact to agricultural and forest resources, land use, and mineral resources. Additionally, because Alternative 2 would have the same potential for population increase as the proposed project, that of no potential, impacts to population and housing, public services, and other utilities would be the same as the proposed project. Finally, Alternative 2 would not result in an increase in traffic or require new roads, or result in an increase in ambient noise. As

such, Alternative 2 would have the same level of impact as the proposed project in the areas of noise and transportation and circulation.

Impact Summary

Alternative 2, Channelization of Yreka Creek, and the proposed project would result in similar impacts associated with agricultural and forest resources, cultural resources, geology and soils, hazards and hazardous materials, land use, mineral resources, noise, population and housing, public services, transportation and circulation, and other utilities.

However, for the issue areas of aesthetics, air quality, biological resources, greenhouse gas emissions and climate change, and hydrology and water quality, Alternative 2 would result in an increase in impact potential.

Finally, while Alternative 2 would reduce flood hazards throughout the city, it would not satisfy the majority of the project objectives.

ALTERNATIVE 3: REDUCED PROJECT

Alternative 3 would result in the decrease of the potential area of impact as a result of a smaller project size. As discussed previously, Alternative 3 would involve those improvements identified for Yreka Creek only, including the 19 reaches in the Yreka Creek area. Those improvements identified for Juniper Creek, Greenhorn Creek, and Little Humbug Creek and the westside tributaries and their reaches would not occur.

When compared to the proposed project, Alternative 3 would be a 40.3 percent reduction of affected stream miles. Also, this alternative would not include the construction of any large retention basis and only five small basins. Greenway acreage would be reduced from 650 to 446 acres and houses or main buildings to be moved would be reduced from 22 to 11. **Table 4.0-1** illustrates the differences in attributes between the proposed project and Alternative 3.

TABLE 4.0-1
ALTERNATIVE 3/PROPOSED PROJECT COMPARISON TABLE

Attribute	Proposed Project	Alternative 3	Difference	Percentage Reduction	Attribute	Proposed Project	Alternative 3	Difference	Percentage Reduction
Stream Miles	14.9	8.9	6.0	40.3%	Reconfigured Parking Areas	19	8	11	57.9%
Major Drainage Swale Miles	8	0.5	7.5	93.8%	Upgraded Road Crossings	46	18	28	60.9%
Large Retention Basins	3	0	3	100%	New Culverts	64	12	52	81.3%
Small Basins & Ponds	22	5	17	77.3%	Affected Public Owners	70	32	38	54.3%
Greenway Acres	650	446	204	31.4%	Pending Acquisitions	7	7	0	0.0%
Additional Floodway Acres	40	40	0	0.0%	Affected Comm. Owners	93	46	47	50.5%
Spoils Acres	164	121	43	26.2%	Affected Large Resident Owners	16	3	13	81.3%
Main Trail Miles	17.3	8.6	8.7	50.3%	Affected Small Resident Owners	283	35	248	87.6%

Secondary Trail Miles	8.9	7.3	1.6	18.0%	Houses & Main Bldgs. to Be Moved	22	11	11	50.0%
New Trail Bridges	23	10	13	56.5%	Outbuildings to Be Moved	43	22	21	48.8%
New Boardwalks	23	11	12	52.2%	Small Sheds to Be Moved	82	24	58	70.7%
New Road & Driveway Miles	2.1	0.6	1.5	71.4%	Storage Yards to Be Moved	37	19	18	48.6%
New Parking Areas	11	8	3	27.3%	Total Reaches	46	19	27	58.7%

Aesthetics

As stated previously, Yreka Creek and Lower Greenhorn Creek have been drastically altered over the years due to past uses.

As discussed in Section 3.1, no scenic resources or scenic vistas would be impacted with implementation of the Master Plan or the FHR Project. While future improvements identified in the Greenway Master Plan would result in visual impacts during construction, the ultimate character of the finished improvements will be a greatly enhanced creek corridor, offer more open space and recreational opportunities, and add to the city's scenic views and visual character.

Implementation of Alternative 3 would result in changes to the area adjacent to Yreka Creek and its 19 reaches, but those areas within Juniper Creek, Greenhorn Creek, Little Humbug Creek, and the eastside tributaries would remain as they currently exist. Because only improvements for the area surrounding Yreka Creek would be implemented in this alternative, the scenic and visual quality of only the Yreka Creek corridor would be affected with Alternative 3. However, as with the proposed project, the scenic and visual quality of the Yreka Creek corridor is anticipated to be improved with development of Alternative 3. In addition, the improved corridor would provide more opportunities for interaction with the natural environment with the expansion of formal trails into the area. This would add to aesthetic enjoyment of the area. However, because Alterative 3 would not be as extensive as the proposed project, improving 8.9 creek miles instead of 14.9 miles, this alternative would provide less scenic and visual improvement in the city than the proposed project. Therefore, the proposed project would improve the creek corridor's current aesthetic condition and would be environmentally superior to Alternative 3.

Air Quality

None of the components of the proposed project would include the provision of new permanent stationary or mobile sources of emissions; therefore, by their nature, all future projects instigated by the 2016 Greenway Master Plan would not generate quantifiable criteria emissions from long-term operations. The Master Plan would generate construction-related air quality emissions. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur. Once construction activities are complete, air pollutant emissions cease. Implementation of mitigation measures would reduce the proposed project's construction-related air pollutant emissions to less than significant levels.

Alternative 3 would also not generate quantifiable criteria emissions from long-term operations and not have any operational air quality emissions. Alternative 3 would have construction-related air quality emissions. However, these emissions would be less than the proposed project because Alternative 3 is smaller in area and therefore less construction would be required. As with the proposed project, this alternative's construction-related emissions could be reduced to

a less than significant level with the implementation of mitigation measures. However, because this alternative would result in less short-term construction air quality emissions, Alternative 3 would be superior to the proposed project with regard to air quality impacts, although both the proposed project and Alternative 3 could be mitigated to a less than significant level of impact.

Biological Resources

Alternative 3 impacts to biological resources would be similar to those of the proposed project, as the mitigation strategy would be the same as the proposed project's but in a smaller geographical area. All of the protections and benefits of the proposed project would remain with Alternative 3. While the smaller area would reduce the opportunity for mitigation, the area would remain large enough to ensure mitigation could occur. Biological impacts associated with this alternative would be similar to those of the proposed project.

Cultural Resources

With implementation of Yreka General Plan programs and mitigation measures identified in Section 3.4, the proposed project would result in a less than significant impact to cultural resources.

As with the proposed project, future projects of Alternative 3 would be required to comply with General Plan programs. The mitigation measures identified in Section 3.4 are typical cultural resources mitigations included in initial studies or environmental impact reports. Because of the size and potential for environmental impact, and the fact that it would most likely be a discretionary project, Alternative 3 would be required to comply with CEQA and undergo environmental review. As those mitigation measures identified in Section 3.4 are standard mitigation for cultural resource impacts, Alternative 3 would also have these mitigations. As such, his alternative's potential for impact to cultural resources would be similar to the proposed project and could be mitigated to a less than significant level.

Greenhouse Gases and Climate Change

The proposed project would produce GHG emissions during the construction of the various improvements identified in the Master Plan and the FHR Project. As with air quality emissions, the Master Plan and the FHR Project would not produce any operational GHG emissions. While, the Master Plan and the FHR Project would produce greenhouse gas emissions during construction activities, these emissions were determined through the GHG analysis to be a less than cumulatively considerable impact.

Alternative 3 would also result in an increase in GHG emissions. However, because this alternative is smaller in size than the proposed project, GHG emissions would be less. As the proposed project was determined to have a less than cumulatively considerable impact when considering GHG and climate change, Alternative 3 would also have a less than cumulatively considerable impact in this area. However, because Alternative 3 would produce less GHG emissions, this alternative would have less impact to climate change and be the environmentally superior alternative when compared to the proposed project.

Geology and Soils

The proposed project would result in less than significant impacts with regard to seismic-related ground failure, such as liquefaction, settlement, fault rupture, and lateral spreading. Additionally, the proposed project would result in a less than significant impact when discussing expansive soils and erosion. No mitigation measures would be required to reduce any of these impact areas to a less than significant level.

Impacts related to seismic activity and expansive soils are all based on the location of a project. Because this alternative is in the same general area of the proposed project, although Alternative 3 is a smaller project, it would have the same result in the potential for impacts due to seismic activity and expansive soils.

As with the proposed project, Alternative 3 would be required to comply with CBC Chapter 70 standards, which would ensure implementation of appropriate measures during grading activities to reduce soil erosion. In addition, all future Alternative 3 projects would be required to prepare and comply with a stormwater pollution prevention plan. The SWPPP would require the implementation and maintenance of erosion control measures and a description of erosion control practices, including appropriate design details and a time schedule. The SWPPP would consider the full range of erosion control best management practices (BMPs), including any additional site-specific and seasonal conditions. As with the proposed project, compliance with CBC Chapter 70 standards and implementation of an approved SWPPP would minimize the potential for soil erosion for this alternative. As such, Alternative 3 is similar to the proposed project's erosion potential and would result in a less than significant impact.

Hazards and Hazardous Materials

The analysis provided in Section 3.7 of this EIR determined that based on the uses that would be part of the proposed project and the existing regulatory structure related to hazardous materials, the proposed project would not cause a threat to public safety during project construction or operation due to the release of hazardous materials or location within an area considered to be a high wildfire area.

Because Alternative 3 is in the same location as the proposed project and would be obligated to comply with the regulatory requirements for hazardous materials, the alternative would have a similar level of impact with regard to public safety during project construction or operation due to the release of hazardous materials, hazardous materials release sites, airports, and wildfire.

Hydrology and Water Quality

The proposed project would have a less than significant impact to groundwater supply and recharge, dam inundation, and mudslides. Additionally, the proposed project would not be affected by a tsunami or seiche. Further, because of the goals, objectives, and action items identified in the 2016 Master Plan, which provide mitigation, the proposed project would have a less than significant impact with regard to water quality and waste discharge, stormwater runoff and altered drainage patterns, and flooding hazards.

The proposed project has a number of attributes built into the project, which provide for improved water quality. These attributes improve water quality by reducing soil erosion by lowering peak flows and reducing hydraulic forces, increasing capture of fine sediment by spreading out high flows over restored floodplains, filtering out contaminants by flowing through vegetated floodplains, filtering additional contaminants by moving storm drain outfalls to far edge of floodplains, and increasing groundwater recharge, thereby increasing base flows and lowering summertime stream temperatures.

Because Alternative 3 is in the same location as the proposed project, impacts concerned with dam inundation, tsunamis, seiches, and mudslides would be the same as the proposed project. Additionally, his alternative would result in the same level of impact for groundwater supply and recharge as the proposed project, that of less than significant. Finally, Alternative 3 would have a similar impact to stormwater runoff and water quality to the proposed project during construction because a SWPPP would be required during construction, as with the proposed project.

While Alternative 3 is smaller in size than the proposed project, this alternative would be designed to include all of the same water quality attributes listed above for the proposed project. As with the proposed project, implementation of these attributes for Alternative 3 would reduce the potential for water quality impacts to a less than significant level.

As such, Alternative 3 would be similar to the proposed project in the areas of water quality and waste discharge, groundwater supply and recharge, stormwater runoff and altered drainage patterns, and flooding hazards as well as dam inundation, tsunamis, seiches, and mudslides.

Effects Found Not to Be Significant

As discussed in Section 3.9, the proposed project would have no impact to the areas of agricultural and forest resources, land use, mineral resources, noise, population and housing, public services, transportation and circulation, and other utilities.

Because Alternative 3 is located in the same area as the proposed project, it would result in the same level of impact to agricultural and forest resources, land use, and mineral resources. Additionally, because Alternative 3 would have the same potential for population increase as the proposed project, that of no potential, impacts to population and housing, public services, and other utilities would be the same as the proposed project. Finally, this alternative would not result in an increase in traffic or require new roads, or result in an increase in ambient noise. As such, Alternative 3 would have the same level of impact as the proposed project in the areas of noise and transportation and circulation.

Impact Summary

The Reduced Project Alternative would result in reductions in impacts associated with air quality, biological resources, and greenhouse gas emissions and climate change.

Alternative 3 and the proposed project would result in similar impacts associated with agricultural and forest resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, transportation and circulation, and other utilities.

However, for the issue area of aesthetics, Alternative 3 would result in an increase in impact potential, as the proposed project would improve the aesthetics of a larger area.

Overall, the Reduced Project Alternative would satisfy the majority of the project objectives.

4.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 4.0-2 summarizes the potential impacts of the alternatives evaluated in this section, as compared with the potential impacts of the proposed project.

TABLE 4.0-2
COMPARISON OF ALTERNATIVES TO THE PROPOSED PROJECT BY IMPACT

Issue	Proposed Project	Alternative 1 No Project	Alternative 2 Channelization	Alternative 3 Reduced Project
Aesthetics	LTS, LCC	Greater	Greater	Greater
Agriculture and Forestry Resources	NI	Similar	Similar	Similar
Air Quality	LTS, LTS+M, LCC	Greater	Greater	Reduced
Biological Resources	LTS, LTS+M, LCC	Greater	Greater	Similar
Cultural Resources	LTS + M, LCC	Greater	Similar	Similar
Greenhouse Gases and Climate Change	LCC	Reduced	Greater	Reduced
Geology and Soils	NI, LTS, LCC	Similar	Similar	Similar
Hazards and Hazardous Materials	NI, LTS, LCC	Similar	Similar	Similar
Hydrology and Water Quality	LTS, LCC	Greater	Greater	Similar
Land Use	NI	Similar	Similar	Similar
Mineral Resources	NI	Similar	Similar	Similar
Noise	LTS	Similar	Similar	Similar
Population and Housing	NI	Similar	Similar	Similar
Public Services and Utilities	NI	Similar	Similar	Similar
Traffic and Circulation	NI	Similar	Similar	Similar

Notes: Significance is identified by the following: NI = No Impact, LTS = less than significant, LTS +M = less than significant with mitigation, SU = significant and unavoidable, LCC = less than cumulatively considerable, CC = cumulatively considerable

Based on the evaluation in this section, Alternative 3, the Reduced Project Alternative, is considered to be the environmentally superior alternative. Alternative 3 would have fewer adverse environmental impacts than the proposed project and was determined to have the fewest negative impacts on the physical environment. Additionally, Alternative 3 would meet all of the objectives of the proposed project.

REFERENCES

C2ES (Center for Climate and Energy Solutions). 2016. *Biosequestration*. Accessed July 13. http://www.c2es.org/technology/factsheet/Biosequestration.

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5.0 – Other CEQA Analysis

5.0 OTHER CEQA ANALYSIS

This section discusses significant unavoidable impacts, growth-inducing impacts, and significant irreversible environmental changes. The purpose of this Draft Environmental Impact Report (Draft EIR) is to satisfy California Environmental Quality Act (CEQA) requirements by addressing the environmental effects specific to the implementation of the proposed project.

5.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL EFFECTS

CEQA Guidelines Section 15126.2(b) requires an EIR to discuss unavoidable significant environmental effects, including those that can be mitigated but not reduced to a level of insignificance. Section 15093(a) of the CEQA Guidelines allows the decision-making agency to determine whether the benefits of a proposed project outweigh the unavoidable adverse environmental impacts of implementing the project. The City can approve a project with unavoidable adverse impacts if it prepares a Statement of Overriding Considerations setting forth the specific reasons for making such a judgment.

As shown in Section 3.1 through 3.9 of this Draft EIR, the proposed project would not result in any significant and unavoidable impacts. The reader is referred to the specific environmental issue area for further details and analysis.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Sections 21100(b)(2) and 21100.1(a) require that EIRs prepared for the adoption of a plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. In addition, CEQA Guidelines Section 16126.2(c) describes irreversible environmental changes as:

> 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.

Long-term irreversible environmental changes would include a change visual character of the site. However, this change is considered to be an improvement over existing conditions. In addition, the project is anticipated to change long-term environmental changes for the improvement of water quality, fish and animal habitat, and recreation opportunities. The project will not result in long-term irreversible changes in local and regional traffic and associated air pollutant emissions and noise level increases, an increase in the volumes of solid waste and wastewater generated in the area, and an increase in water consumption or wastewater production.

Development of the project site would irretrievably commit building materials and energy to the construction of the proposed project. Nonrenewable and limited resources that would likely be consumed as part of project site development would include, but are not limited to, oil, natural gas, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials.

5.3 GROWTH-INDUCING IMPACTS

INTRODUCTION

CEQA Guidelines Section 15126.2(d) requires that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

> The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth. It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. For example, direct growth inducement potential would result if a project involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities or if it involved a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand (*Napa Citizens for Honest Government v. Napa County Board of Supervisors*). Similarly, a project would indirectly induce growth if it removed an obstacle to additional growth and development, such as removing a constraint on a required public service. For example, a project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with, or accommodated by, the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

COMPONENTS OF GROWTH

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since the general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

GROWTH EFFECTS OF THE PROJECT

As required by Government Code Section 65300, the General Plan is intended to serve as the overall plan for the physical development of Yreka. While the General Plan does not specifically propose any development projects, it does regulate the location and land use type of future development and thus controls future population and economic growth that would result in indirect growth-inducing effects.

As shown in Section 2.0 Project Description, full development of the Yreka Creek Greenway Master Plan would result in improvements to approximately 14.9 stream miles. The Master Plan would result in approximately 27.2 miles of main and secondary trails and 650 acres of greenway area, as well as 11 new parking areas. Additionally, implementation of the Master Plan would result in the moving of 22 homes or main buildings out of the flood zone. However, none of the improvements result in the conversion of vacant land into urban uses. None of these improvements would result in substantial new employment or housing units in the city. No expansion of existing utilities or extension of utility lines into an area not currently served would be required to complete the projects in the Master Plan. The Master Plan would not result in any development associated with growth inducement.

Implementation of the Flood Hazard Reduction (FHR) Project would affect a total of 1.3 miles of stream area. All improvements proposed for the FHR Project would be related to the recontouring of the floodplain. No new commercial/industrial buildings, homes, utility extensions, or public streets would result from implementation. The FHR Project would not result in any development associated with growth inducement.

ENVIRONMENTAL EFFECTS OF GROWTH

Environmental effects of developing the 2016 Greenway Master Plan and the FHR Project include potential effects on special-status species and their habitat, potential destruction or damage to cultural resources, potential for increased erosion and runoff affecting soil stability and water quality, changes to drainage patterns and runoff, and potential changes to visual character. However, these issues are discussed throughout this Draft EIR in Sections 3.1 through 3.8. Mitigation measures are included when needed.

5.4 ENERGY CONSERVATION

INTRODUCTION

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the California legislature adopted Assembly Bill (AB) 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct state responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary

consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines.

CEQA Guidelines Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. For the reasons set forth below, this EIR concludes that the proposed project would not result in this type of energy consumption and therefore would not create a significant impact on energy resources.

PROJECT ENERGY CONSUMPTION AND CONSERVATION

None of the components of the proposed project would include the provision of new permanent structures or the need for consistent and ongoing vehicular travel; therefore, by their nature, the Central Reach, North Reach, South Reach, and all future projects instigated by the 2016 Greenway Master Plan would not result in the consumption of energy resources from long-term operations. As determined in Section 3.9, Effects Found Not to Be Significant, once completed the project would not result in a permanent increase in traffic. Additionally, the project improves non-motorized transportation options by providing pedestrian and bicycle paths along the Yreka Creek corridor. Traffic conditions after the project is constructed are expected to be the same as or slightly better than existing traffic conditions. Therefore, new demands on electricity, natural gas, and automotive fuel will not be quantified, as the project would not result in such energy demands.

Construction activities associated with the project would be short term and temporary, yet would result in the consumption of fuel to power equipment. The amount of construction-related fuel use was estimated using ratios in the Climate Registry (2015) General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Construction-related fuel use associated with the proposed project is summarized in **Table 5.0-1**. According to the Master Plan, completion of the improvements identified in the Master Plan may take 20 years or more.

TABLE 5.0-1
PROJECT CONSTRUCTION FUEL USE

Project Component	Project Construction Fuel Use	Project Construction Fuel Use Amortized Over the Life of the Project (20 Years)
Future Greenway Master Plan Projects	296,256 gallons	14,813 gallons
Central, North, and South Reach Combined Total	360,394 gallons	18,020 gallons
All Project Components Combined	*656,650 gallons*	*32,833 gallons*

*Sources: CalEEMod 2013.2.2 & Climate Registry 2015; see **Appendix 5.0**.*

For comparison purposes, the amount of construction-related fuel use attributable to the proposed project is contrasted with the total amount of construction-related fuel use projected to be consumed in Siskiyou County over the next 20 years (2015–2035), as quantified using the California Air Resources Board's EMFAC2014 model, which provides projections for typical daily fuel usage county by county for current and future years. This comparison is summarized in **Table 5.0-2**.

TABLE 5.0-2
PROJECT CONSTRUCTION AND SISKIYOU COUNTY FUEL USE COMPARISON

Project Component	Project Construction Fuel Use Amortized Over the Life of the Project (20 Years)[1]	Siskiyou County Construction-Related Fuel Use Over the Life of the Project (20 Years)[2]	Percentage Increase Countywide
Future Greenway Master Plan Projects	14,813 gallons	19,682,159 gallons	0.07%
Central, North, and South Reach Combined Total	18,020 gallons		0.09%
All Project Components Combined	*32,833 gallons*		0.16%

*Sources: [1]CalEEMod 2013.2.2 & Climate Registry 2015; [2]EMFAC2014 (CARB 2014). See **Appendix 5.0**.*

Notes: The project increases in construction-related fuel consumption are compared with the countywide fuel consumption in 2015.

As shown in **Table 5.0-2**, the increase construction-related fuel over the life of project construction would increase use in the county by 0.16 percent. Overall, this demand for fuel would not result in the need for new or altered facilities given the temporary nature of construction. Furthermore, construction activities are not anticipated to result in an inefficient use of energy, as construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would conserve the use of their supplies to minimize costs to the project. For these reasons and because of the temporary nature of construction activities, this effect would have a less than significant impact.

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